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CANADIAN GEOGRAPHICAL JOURNAL

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N.F.B. photograph

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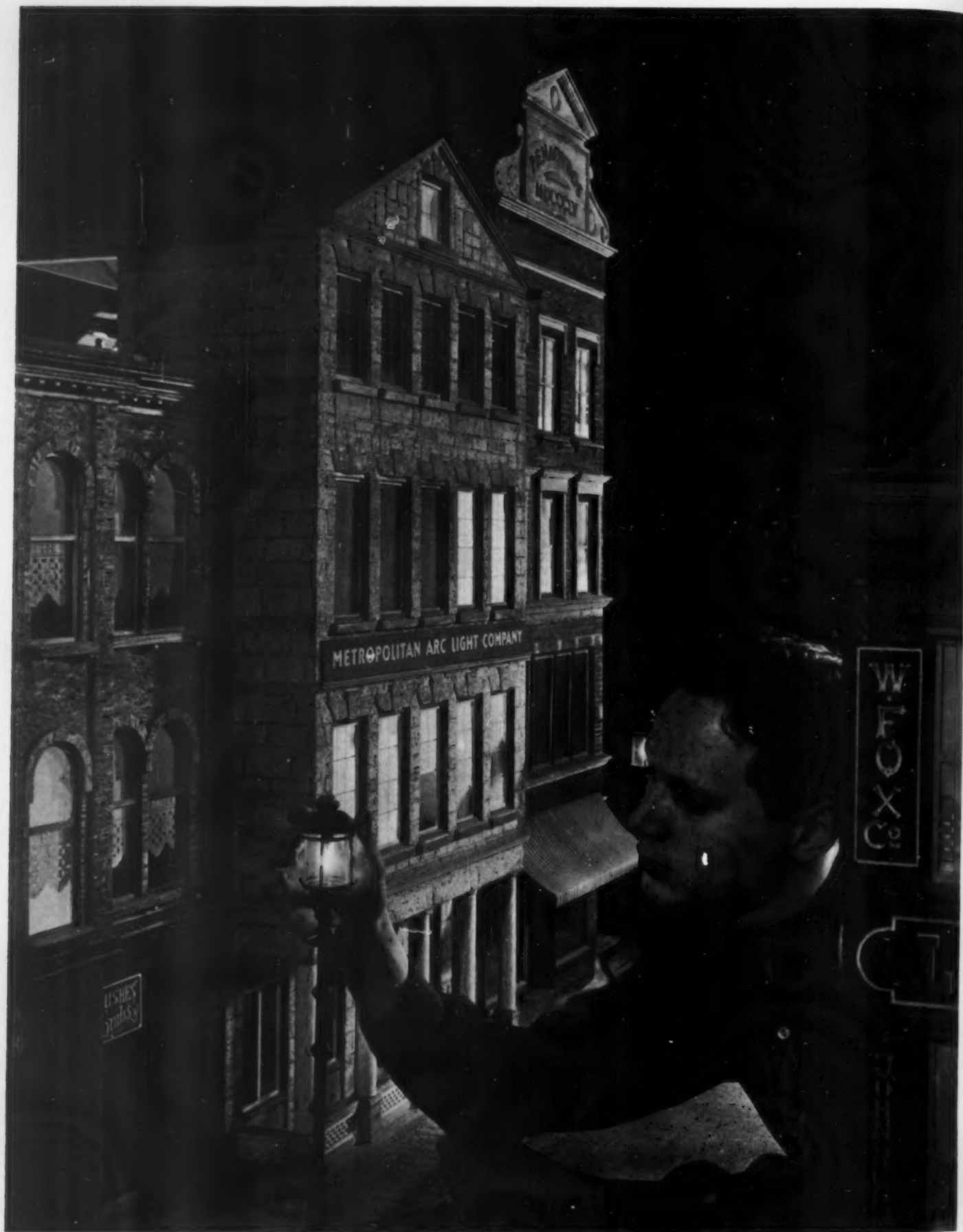


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One of the animators at the Geesink Studios in Amsterdam adjusts a street lamp on the miniature set of a nineteenth-century city in the United States for a sequence in "The Story of Light".

Making

"The Story of Light"

by JOSEPH FOREST

MY INCURABLE romanticism about place names forced me to grimace in protest when, in 1951, a small can of motion picture film reached my desk bearing a label which announced that it was produced in a place called "Dollywood". "No!" I groaned. "That's what I read, but I cannot believe it, it *must* not be."

But it was. And when I found out that this place with the impossible name was run by a man named Joop Geesink, I quailed. However, one look at the film contained in this can made me forget Xanadu and Marco Polo. Impossible names or no, what I saw on the screen of the projection room in New York that day made me realize that I was meeting a world I never even dreamed had existed until that moment. This was a world which would have delighted poor Melies, the great and unsung pioneer of the fantastic film. As a film man, I saw at a glance that this Joop Geesink had finally made a reality of the dreams of all the movie pioneers who saw in puppetry a viable grammar of film. From that moment, I could barely wait for an opportunity to work on a major film project with Geesink.

In February 1953 I finally reached the home in Amsterdam of Joop Geesink's "Dollywood", a rambling brick and wood collection of small buildings flanked by the canal on one side, dairy and tulip farms on two sides, and the Cine-tone Motion Picture Studios on the fourth.

Preparing the tiny figures of primitive mother and infant for the prehistoric sequence in the film.

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Photographs by MALAK

By that time I had worked with Joop Geesink in New York. Now I was in Amsterdam to start the production of a major film for General Electric, "The Story of Light".

The young Geesink was an artist and cartoon film animator when the Nazi army of occupation took over the Amsterdam studios where he worked. Geesink was placed in charge of a unit to make animated film for the Occupation Forces, where he spent much money and produced very little film. What the Germans never





The animator, left, directs the setting of a nineteenth-century street. Assistants attend to details on the carriage and street lamp.

One of the colourists in the studio retouches the figure of a Roman citizen for one of the sequences. The set represents the interior of a Roman temple of Zeus. The hanging lamp burnt olive oil.



knew was that he spent most of this period working out his theories of puppet films for post war use. With the liberation, Geesink became an art director for the American army and this time there was nothing wrong with his production. Shortly after this, backed by some shrewd Amsterdam businessmen, Geesink opened his first small puppet film studio.

Within a few years, Geesink was turning out advertising films which often proved more entertaining to audiences all over Europe than the feature pictures which headed the programs. They had a style, a wit, and a rare spirit of their own. The puppets, carved by hand out of wood and shot in stop-motion photography, were able to carry any type of story. They moved with a graceful, life-like flow in special miniature sets designed for realism, fantasy, or even for abstract concepts of ideas and events.

Toward the end of 1952, when the General Electric Company began to plan a film commemorating the 75th anniversary of Edison's invention of the incandescent lamp, I was given the task of telling an enormous story on a less than enormous budget, in the span of ten minutes of screen time.

I saw in my mind's eye a film telling the whole story of man's quest for light from the dawn of creation to the present time, a saga of light covering everything from man's discovery of fire through the eras of oil and tallow and sperm whales and gas up to electricity. There was only one way to tell this story properly, and this was to build the many worlds we spoke of in miniature—but miniatures in which the audience would find no tell-tale traces of the string motivated puppeteer or the atelier.

After much research, I arrived in Amsterdam with my script and my preliminary sketches. The latter were working indications of the story's continuity for the Geesink artists to translate into art.

In Geesink's process, the mechanics of translating the script's action into motion picture film is achieved by means of stop-motion photography. In this process, each action is a separate still photograph; the puppet is so manipulated that, for example, the simple act of lifting the



A scene in the film. Friends and co-workers of Thomas Alva Edison gather in the laboratory at Menlo Park to watch the inventor demonstrate the operation of his incandescent light bulb.

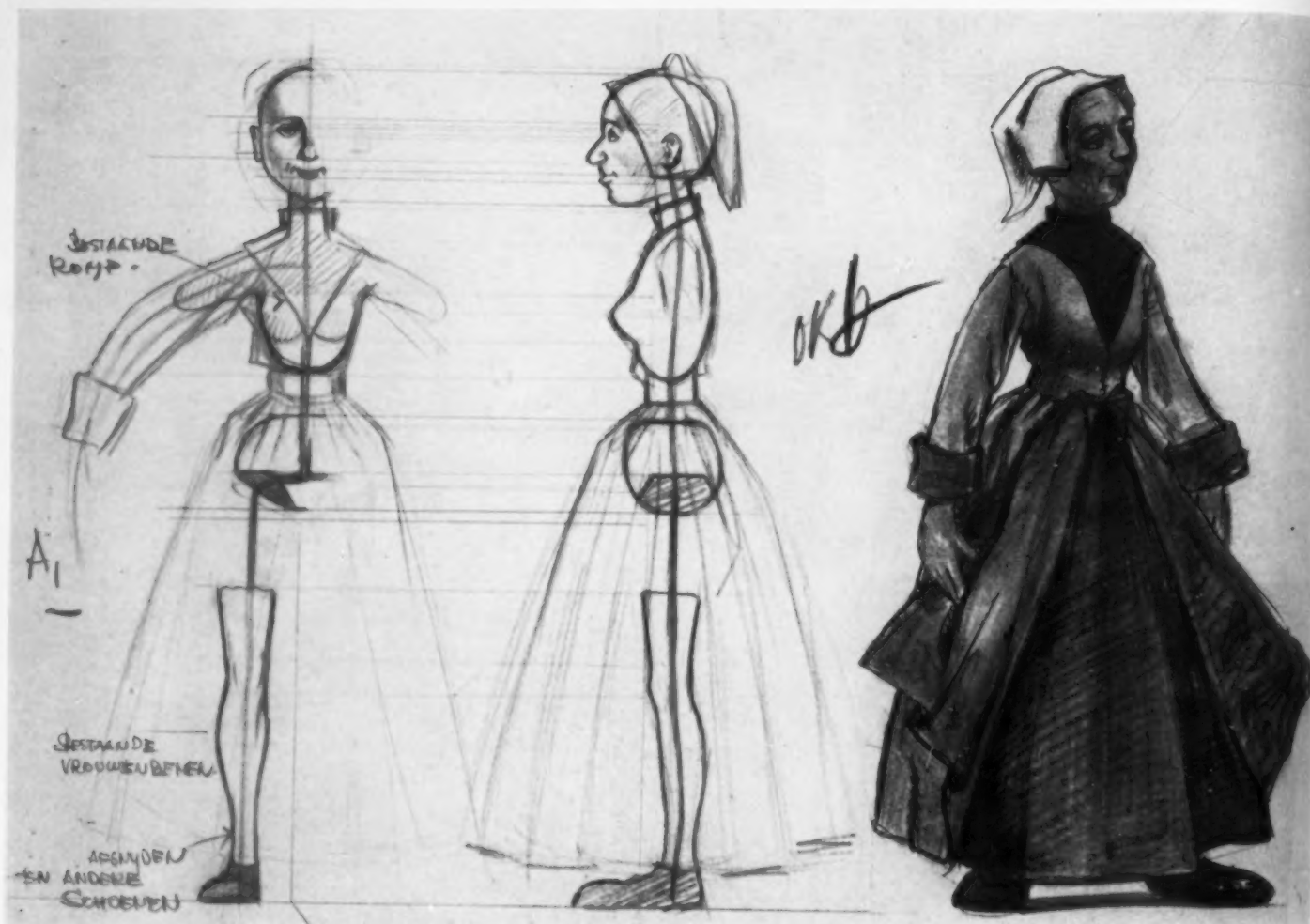
hand to the mouth may consist of fourteen separate *sequence* shots. When the film is projected, this action of the hand appears as it would in live action. With fourteen frames to the foot of film, and ninety feet to each minute of screening time, and nine hundred feet of film to be photographed, some 12,600 separate exposures had to be made to tell our story.

This figure, however, while it covers the number of exposures, does not even begin to cover the number of individual moves that had to be made. Many of the scenes called for anywhere from two to as many as twelve individual puppets, each of which had to be moved, frame by frame, through action after action.

The puppets are each, in themselves, an amalgam of varied arts and sciences. Each puppet is designed by an artist who first makes the

The reproduction of Edison's home in Menlo Park.





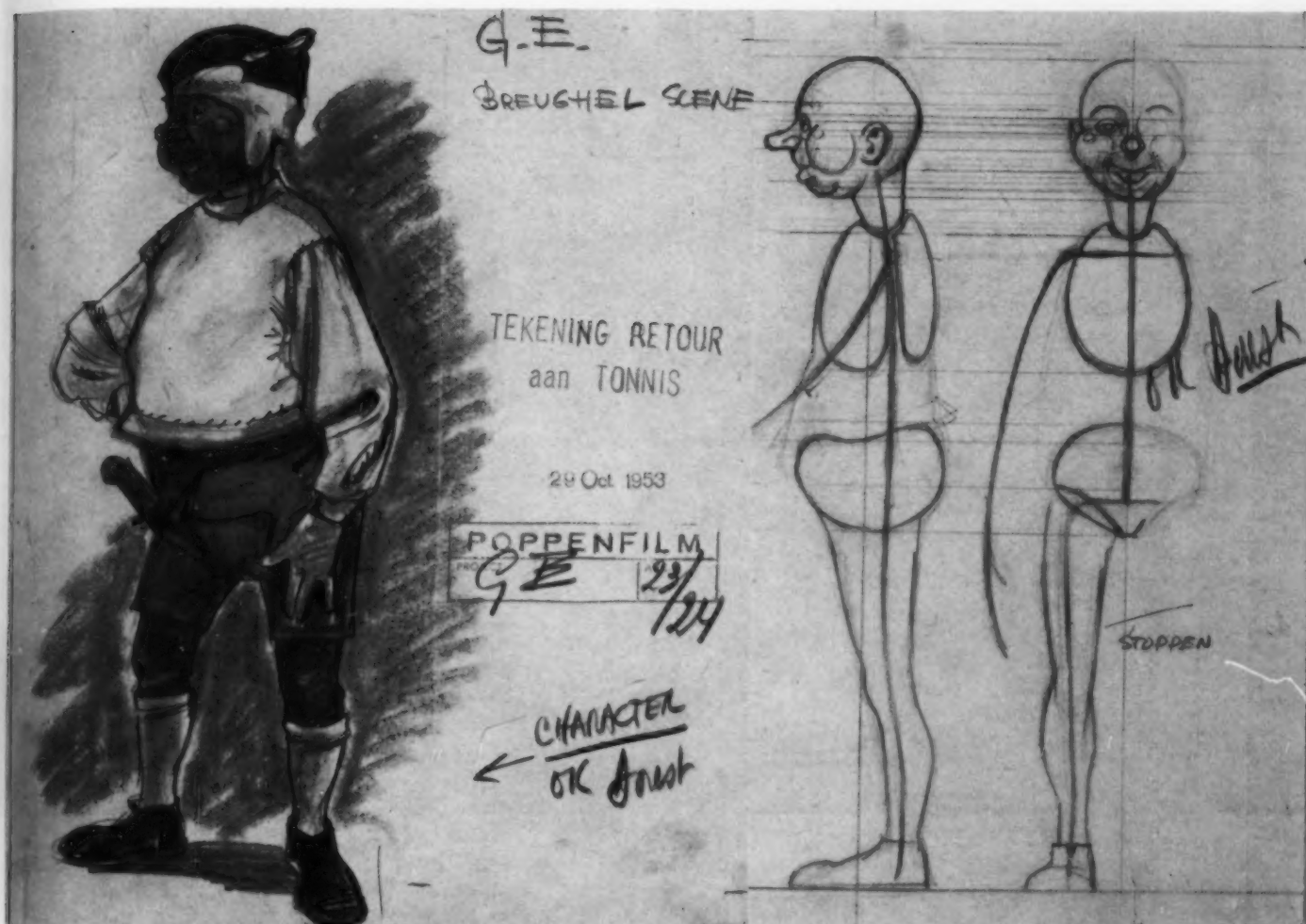
These are examples of some of the preliminary work behind the scenes. The artist makes a colour sketch of the character (right). This is translated into mechanical construction drawings for the puppet maker.

A plastics technician skilfully makes miniature hands and feet from detailed drawings.



preliminary colour sketch of the character and his costumes. These sketches then are translated into mechanical construction drawings which give the puppet makers the complete anatomy of each figure as demanded by the animator. The examples are two figures from the "Breughel sequence" of my film. The heads are sketched in rather realistic detail; this is for the guidance of the woodcarver who must sculpt them. The details of the body construction are sketched in an engineering "shorthand" which tells the bodymakers all they have to know for the kinetics. Copies of the sketches go to the costume makers, the colourists, the plastics technicians (for the making of hands and feet), the wig makers and animators. Most of the puppet characters have a different head for each expression; some of the "stars" of "The Story of Light" had as many as nine separate heads made for their role.

The puppets themselves are generally—for an adult figure—about 8 to 12 inches high,



In the working drawings the heads are sketched in realistic detail for the guidance of the wood carver. These two characters are taken from "Wedding Supper" by Breughel, sixteenth-century Flemish artist.

scaled to represent people of an average height of five to six feet. They act in a world built to this same scale. An entire city street—authentic in every detail—was built in an area smaller than the interior of an average size automobile.

It goes without saying that, for the General Electric film, the sets were built only after exhaustive historical, social, artistic, and architectural research, and they ranged from pre-historic caves through the tomb of an ancient Pharaoh, the interior of a monk's cell, the interior of a sixteenth century peasant's barn, the temple of a Roman god, the dockside of a Nantucket whaling station, to the exterior of a late nineteenth century American city street, among others. Research, however, could only tell what to reproduce, not how to achieve given effects.

There was the grim day when, for the first of many times, we became acutely conscious of the true complexities of what originally appeared to be a very routine job—the photo-

Copies of the sketches go to the seamstress who prepares and fits the costumes.





Scenes from the film. A prehistoric family gaze from their cave at a blazing tree, kindled by lightning, bringing light into the darkness.

Carrying a torch, an Egyptian priest leaves the tomb of his Pharaoh to centuries of darkness.

Jolly characters from Peter Breughel's paintings come to life in this carefree scene reproduced with meticulous attention to every detail.



graphing of a candle flame. In ordinary motion picture photography filming a lighted candle is simply a matter of pointing the lens at the flame, pressing the motor switch and letting the film grind. But this was *stop* motion—each flicker of the flame a separate shot, and the shots sometimes made minutes apart. Suddenly we were confronted with the question of holding the flame steady, keeping it constantly in the same position so that it didn't waver unnaturally, which would have resulted in uneven jumps rather than a normal flicker on the screen.

The first inkling of candle flame trouble came with the explosion that followed the lighting of the first real candle on the first real set. The explosion was human, not chemical. Frans Hendrix, the senior animator, having made the discovery that wax disappears as the candle burns, promptly added the element of heat to the fickle element of light under discussion.

In the weeks before the disappearing wax problem was solved all of Dollywood experimented with attempted solutions. This was no minor problem: after all, the whole theme of the picture was the story of light, in which the candles played a major part. They made candles out of wood and out of metal; candles



In the Dark Ages the world's culture was preserved within the walls of candle-lit monasteries.

with fabric wicks, and candles with metal wicks; candles that burnt paraffin and candles that burnt cooking gas; none of them worked in stop-motion photography.

The "wonder candles" finally constructed were, basically, hollow metal tubes, sealed at one end, camouflaged at the other to resemble wax candles. For fuel, they used a holy oil



The model for the miniature crucifix to hang in a monk's cell was a Gothic wood-carving found in Paris. A skilled craftsman works with a drill on the beautifully made reproduction.

procured from a small religious supply establishment. The oil was fed to the hollow wick by means of a gravity flow tube arrangement made possible by the adaptation of a plasma field transfusion outfit.

While the problem of the disappearing wax was now solved, we were still left with the question of controlling the flickering of the flame. The animator eventually built himself a plexiglass and cardboard astral dome, encasing himself, his camera, and his candles within it, and risking suffocation each time he photographed a candle-lit sequence.

The research that went into the architecture of the sets was matched by the detailed studies that went into the creation of the costumes and the props.

The authentication of details of life when man's home was the cave, called for consultation with anthropologists, archaeologists, and even a petroleum geologist who was a fine amateur "digger". The walls of an Egyptian tomb were carved into linoleum blocks to simulate the sandstone bas reliefs of the ancient artisans who made this last resting place for a king. From a photograph of Edison's first laboratory in Menlo Park, New Jersey, came the replica in miniature seen in the film.

A simple detail like the crucifix on the wall of a mediaeval monk's cell took me to Paris, where I found the Gothic woodcarvings I felt were proper for the tone and feeling of this sequence. These were reproduced by sensitive and loving hands at the studio.

The total shooting time for the entire film took slightly less than a year—or an average of less than four exposures per day. The temperamental eruptions—and they took on all dictions, from my own New York English to Mizsik's Magyarish Dutch to Joop Geesink's combined Anglo-Nederlandischer expletives—



The chief wood carver (left) and an assistant work on the replica of a whaling ship, the Nathaniel B. of New Bedford, Massachusetts.

The serving maid in the Breughel scene, a character taken from the painting "Wedding Supper". Peter Breughel painted chiefly every-day scenes about him and delighted in humorous figures.



were forgotten, the scars all healed by our first look at the film "dailies" as they came back from the colour laboratories in London.

Once the film was edited, more international flavour was added when the noted British composer, Stanley Bates, was commissioned to write the score. This was no ordinary assignment, since the script of the film never called for more than eighteen seconds of narration. The complete narration reads:

"In the beginning, God created the heavens and the earth, and the earth was without form and void and darkness lay upon the

face of the deep. And the Spirit of God moved upon the face of the waters, and God said Let there be light, and there was light."

The words of course are the opening lines of the Book of Genesis.

The rest of the story is told visually, with the emotional assistance of a score that excited all of us. The score was recorded in London, by the London Symphony Orchestra, under the baton of Muir Mathieson.

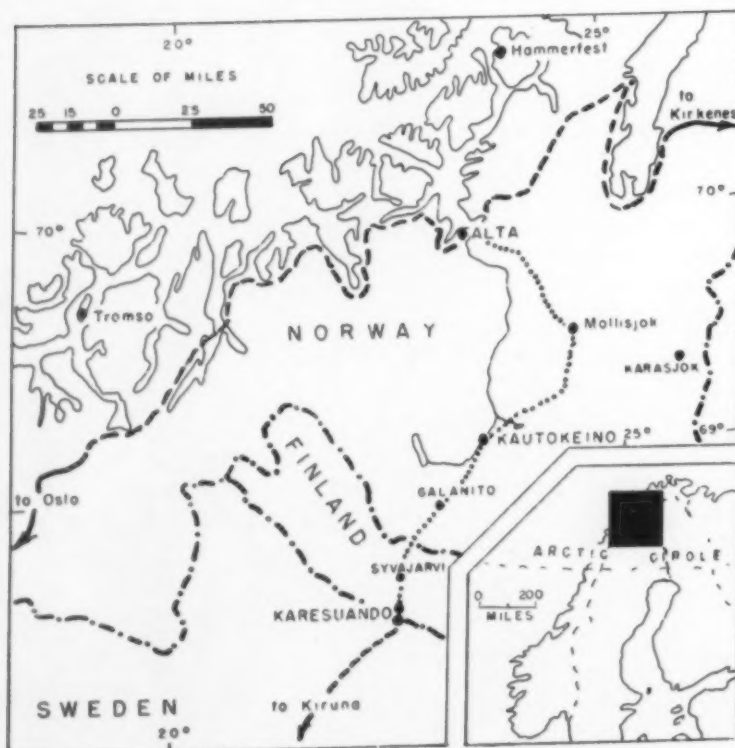
At last it was finished, and here was the story of light—all done in a world that can be created on a plane no larger than my desk.



Looking northward from a slate quarry down the valley of the Alta River towards the sea. The chief industry at Alta is quarrying roofing slates which are used locally and exported.

South to the Circle

by TREVOR LLOYD



Photographs by the author. Sketches by Jens Rosing reproduced by courtesy of the artist and the Editor, *Gronlandsposten*, Godthaab, Greenland. Map drawn by Wm. G. Mattox, Jr. from original by the author.

THE FOLLOWING is an account of a north to south journey through Norwegian, Finnish, and Swedish Lapland made in April 1951. It began at Alta, Norway, which lies at the head of Alta Fiord, close to the seventieth parallel of latitude and ended at Karesuando, the northernmost village in Sweden. Although not a long journey in miles, the means of transport bridged the centuries from the ancient to the ultra-modern.

At Alta the weather had for a week or more been well below freezing. The ground was covered by deep snow and there was a trace of thin ice in the more sheltered parts of the

Snowmobile outside of Mollisjok Inn.

fiord. I had spent about a month in north Norway and hoped to return to Denmark by going as near to due south as possible. The first part of the journey was to be done by snowmobile, changing over to Lapp reindeer sled when no other means of travel was available.*

April 10 turned out to be a bright and sunny day at Alta, with temperatures rising well above the freezing point and the deep snow turning into a flood of thaw water. The snowmobile coming from the interior had been unable to reach the town and so had waited a few miles outside where snow was still deep enough to protect its rubber tracks from damage. At 9 o'clock in the morning of April 11, I left by small bus for an outlying village and there transferred to the snowmobile. The vehicle had been manufactured in Canada. It had a streamlined bus body holding from twelve to twenty passengers and was steered by two large aircraft-type skis. There were ten of us going, all Lapps except for an engineer from the Norwegian road administration and myself. Several of the Lapps had dogs and bundles of possessions with them. Once loaded, the snowmobile roared off to the southward following a narrow river valley and then climbing to higher terrain until it was about 1,500 feet above sea level. We followed a trail through thinning birch woods, rising in places above the treeline for short distances, and then ran down onto a frozen lake and crossed it to the first stopping place, one of the mountain inns which are scattered throughout Norwegian Finnmark. They are run by local Lapps to provide simple sleeping accommodation and meals for travelers. After a drink of coffee and a warm by the stove, someone called us to another room to listen to the radio news. There I watched a dozen Lapps hear that General MacArthur had

*The route is today followed throughout by scheduled snowmobiles.



been dismissed. It was an impressive illustration of the "oneness" of the world. Picking up a few more passengers, we continued toward the southeast. By this time the weather had worsened and we were driving through a severe blizzard. The trail was barely visible and navigating the jolting vehicle kept the driver busy. The next stop was a group of farm buildings and close at hand a large red-painted wooden chalet, the mountain inn at Mollisjok. Another snowmobile was parked outside, half-buried in loose snow. We climbed out and scrambled through the drifts to get indoors. There we found a group of Norwegians and Lapps who were travelling from Kautokeino to Karasjok. Among them were the Norwegian government administrator of Lapp territories and a young Greenland native who was visiting Lapland to study reindeer management. The latter I had last met in the Canadian Consulate at Godthaab during the war. Although an artist by profession, he planned to secure two or three hundred reindeer for shipping to West Greenland as the basis for a new industry. After a quick meal of reindeer stew our snowmobile was reloaded, this time with only four persons, the driver, two Lapps and myself.

Kautokeino, Norway. The church (centre) is the only building that survived the Nazi occupation. In the distance is the small hotel.





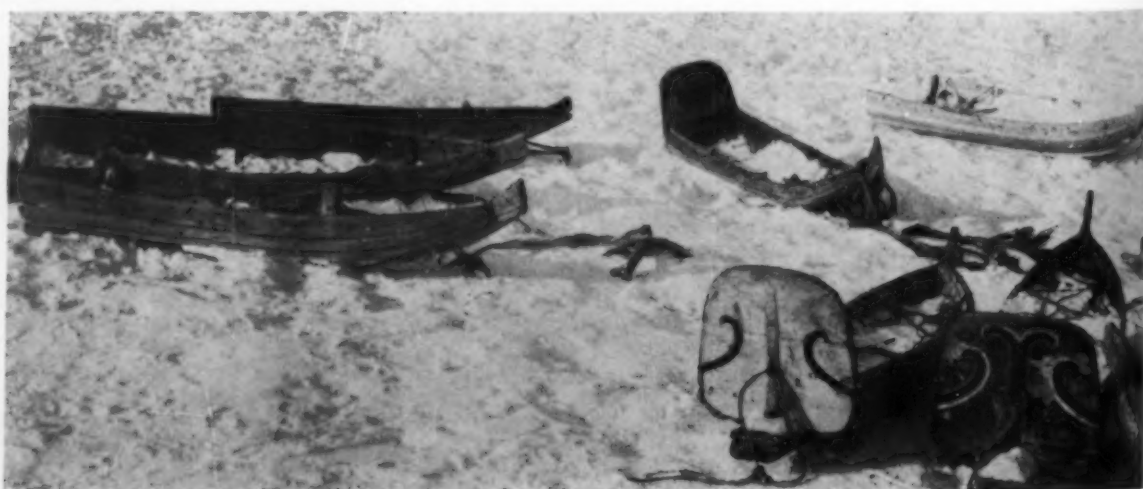
The old parish church at Kautokeino is a traditional gathering place for mountain Lapps. Here some are assembling for the Easter service.

We had scarcely left the hamlet of Mollisjok and turned down a slope to find the river route when the trail disappeared. After twisting and turning among the many clumps of bushes, the driver finally confessed that he had no idea where he was. So the four of us climbed out into the snowstorm and the two Lapps scouted around to try and find some trace of the trail. Eventually one of them discovered it because he felt the snow underneath his feet was rather more packed down than it was elsewhere. By jumping up and down he had detected what we were looking for. So, continuing southwestward we finally reached Kautokeino, a Lapp village, in the interior of Norwegian Finnmark. It is a meeting place for nomadic Lapps from the interior and a market town for the farming and fishing Lapps living nearby. The village as it stands today is almost completely postwar. When the Nazis withdrew their forces from Finnmark, during the autumn and spring of 1944-45, they destroyed everything in their

wake, except a very few churches, and Kautokeino today still has a half-finished look.

I had made arrangements by telephone from Alta to be met by a Lapp with three reindeer sledges to take me through Finland to Sweden. We were to leave Kautokeino at 6:00 that evening, spend the night at a small village, and get to the Swedish border town of Karesuando some time in the middle of the following day. At 10:00 came the tinkle of sleigh bells outside. Looking through the snowy window I saw the three reindeer and their sledges, with a Lapp driver and his young assistant. The reason for three sledges was to enable the Lapp to ride on the front one, my baggage, such as it was, to go on the second, and me to be a passenger in the third. "The assistant" would merely share in the traditional scuffle with the reindeer before they could be loaded and launched in the right direction. I was soon to learn that the contract with the Lapp included pushing my sledge much of the way to Karesuando. The

Small boat-like sledges are typical Lapp vehicles. These are 'parked' on the ice of the Kautokeino River.



Kautokeino Lapp boy beside his reindeer; note his woollen cap, lasso (used for rounding up herd) across one shoulder, large knife, and reindeer-skin boots.

first sledge, used by the Lapp, was a lightweight one, while the other two were heavier. In my own were two or three reindeer skins, to serve as cushion and blanket when riding. A kind friend had lent me a large reindeer-skin *pesk*. It reached from the shoulders half way down below the knees and had only a small opening for the head. On my feet were typical Lapp reindeer-skin boots. Food supplies for the journey, as far as I was concerned, consisted of a large loaf of bread, an enormous piece of cheese and two thermos bottles of coffee. What the Lapp carried I did not know until he later produced a bottle of alcohol. The pace at which we took off gave promise of an early arrival at Karesuando, but this first burst of speed could not last. The Lapp did his best with his one lone rein to persuade the leading animal to go in the right direction. Reindeer are not "steered". A single trace runs from the right side of the animal's jaw, under its chin, back along its left flank to the driver's hand. This trace is perhaps 15 feet long. It is the sole means of communication between driver and deer except for shouting. I was quite unable to control my animal in any way and gained some comfort from finding the Lapp guide in equal difficulties. It was, of course, dark, the snow



A good sledge reindeer is a prized possession. Antlers are bedraggled at this season (March-April) and soon fall off.





Per Oskal leads the three sledges across the vidda or plateau on the way to Finland.

was deep and was still falling and I had no idea where we were going. There was nothing to do but sit patiently in the sledge and slide along. The understanding was that we were to spend the night at Galanito, a Lapp hamlet, part of the way to Finland. Now and then in the chilly gloom we saw a twinkle of light from an isolated Lapp house but nothing very much happened until about 2 o'clock in the morning when the barking of dogs from afar caused our reindeer to plunge and rush wildly all over the river. On reaching Galanito, a cluster of small farm buildings, I took my bedroll into what seemed to be the rest house and tried to get some sleep. I need not have taken the trouble. My faithful guide and the other Lapps joined in the noisy preparation of a good cup of strong coffee. As it was now shortly before 4:00 a.m. nothing remained but to join the Lapps at breakfast consisting of their coffee and my bread and cheese. This was obviously no place to confess ownership of a thermos bottle. Each Lapp took

out his enormous sheath knife and hacked off the food he needed. The knife might next be used to chop ice off a sledge runner or cut leather to repair a harness. Soon the travellers were outside hunting up their fractious deer.

It was light enough to take photographs, and after a round of shots in the village and a few sneak shots of my photo-sensitive Lapp *vappus* whose name I discovered to be Per Oskal, we prepared to leave. What lay ahead of us was a drive up the river valley, then the climb from it onto the plateau or *vidda*, and the descent on the southern side into another river valley which formed the boundary with Sweden. In doing this we would go through a long narrow strip of Finland. My notebook records that when we left Galanito the temperature was two or three degrees below freezing. There was 10 tenths of cloud cover, a blizzard was blowing and the loose snow on the ground was a foot or more deep. The wind was coming from the south, the way we were to go. So hour after

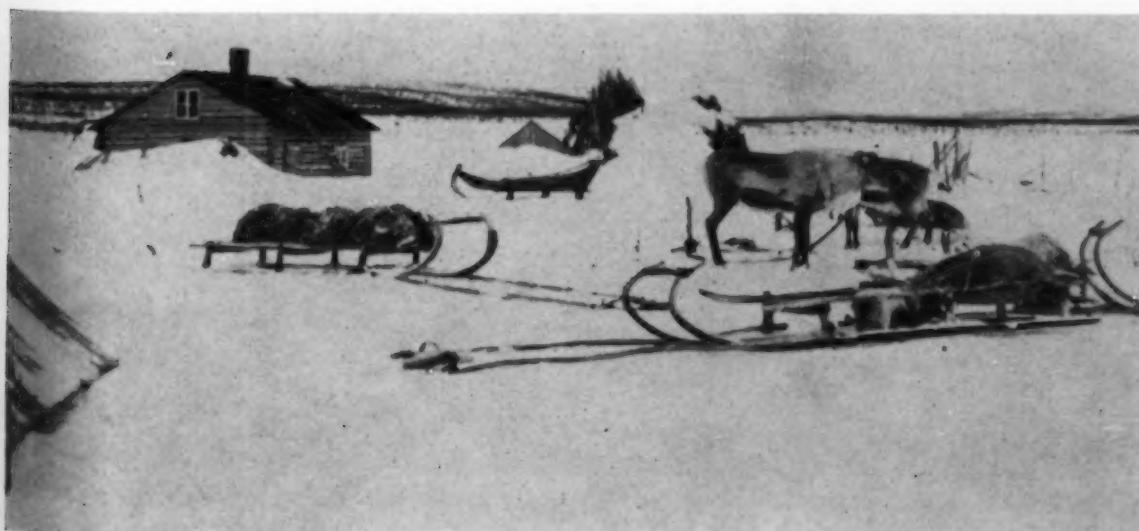
The vappus, Per Oskal, stands beside his reindeer as it searches for reindeer moss beneath the snow at Syvajarvi.



hour we pushed up the hills and slid down the other side. In time the birch woods got thinner and we climbed still higher. Then far off in the distance across the rolling plateau the sun which now had broken through the overcast lit up a small red building. The reindeer were taken out of the sledges and Oskal began kicking through the snow in ever widening circles looking for the reindeer moss that he knew to be somewhere nearby. Soon the reindeers' heads were buried over their ears as they nibbled at the pale green lichen under the snow. This was Favresjok, one of the mountain huts provided by the Norwegian Government. Inside a small lobby led into an unlocked room. There were a stove, some dishes and other cooking utensils, four bunks and a small table with a couple of benches. Oskal lay down in one of the bunks and promptly went to sleep. We rested for an hour or two before taking the trail again, this time for Finland.

The wind was blowing strongly as we climbed still higher onto the plateau, and we missed the protection of the thin birch woods, now left far behind. After steady plodding for many monotonous miles Oskal stopped his reindeer

and I walked cautiously past my own, to ask him why he had halted. With an oratorical air, he said, "I am standing in Finland, but you are in Norway." In other words we were astride the international boundary. Looking around there was nothing to be seen except snow, and our trail stretching away behind us. Far off to the right he pointed to a rock, which marked the line. Consulting the map I judged that this was boundary post No. 319, and formal notification that my visa was now going into effect. We continued steadily on our southerly way, at times high on the plateau and others dipping down into a valley and following the trail from one lake to another. After again climbing over the *vidda*, we finally dropped steadily downward through birch woods to a large lake, at the far side of which was a farm; it was Syvajarvi, about half way to Sweden. As we were untying our reindeer and turning them loose among enormous chunks of reindeer moss, three Lapp sledges swept into the farmyard from the west. Their reindeer had a well-fed look, the sledges seemed to be less dilapidated than ours and the three men walked with a self-confident air that contrasted with



Sledges of mountain Lapps gathered at Syvajarvi, Finland.



Swedish Lapp children at the Karesuando school for nomads. The lace-trimmed caps of the girls and the red wool pom-poms on the boys' caps are characteristic of the Karesuando Lapps.

the rather hang-dog look of my friend Oskal. They were dressed in long white reindeer robes, reindeer-skin boots brightly decorated with red, orange and yellow, ornamented gauntlets, and their Kautokeino Lapp hats carried long red and yellow streamers. In fact they appeared to be prosperous and superior persons. We entered the kitchen of the farmhouse together and took off some of our garments to dry them above the stove. There seems to be a communal way of treating other people's homes in Lapp-land. I never did discover who lived in the farmhouse but we drank their coffee and ate their cakes and made ourselves free of their quarters. The conversation was being carried on in what I suspected was Finnish, a language in which it is impossible to make any guesses as to the trend of the discussion, supplemented by many phrases in what seemed to be Lapp. Fortunately, the three newcomers spoke good Norwegian and were kind enough to do their best with my modest Danish. They were, it

appeared, Norwegian mountain or nomadic Lapps on a journey to Finland and Sweden to trade. They lived in winter to the southwest of Kautokeino and only visited the settlement rarely. In summer their homes were on the sea-coast to which they made the long journey with large reindeer herds in the spring, returning in the autumn. All of them had been to boarding



Ladle and knife.

schools for nomads' children, up to the age of about 14. They spoke Lapp among themselves, but used Finnish and Norwegian and possibly Swedish also. One of them was very interested in the plans that had been announced for buying reindeer in Lappland for shipment to West Greenland.* All in all he seemed to be an intelligent and well-informed person. These three illustrated the fact that a truly nomadic Lapp is an aristocrat in North Norway. When the Lapp becomes a village dweller, gives up his reindeer and takes to farming, he may become a rather poverty-stricken peasant, or worse still, a fisherman.

The light was fading as we once more harnessed up our animals and set out for the Swedish boundary. Oskal had loaded many large lumps of reindeer moss into the second sledge along with my baggage. The wind whistled coldly in the night air and took the last shreds of romance out of the trip as we plodded steadily along. Then the first dark pines began to appear among the thin birches and from a scattering of one or two here and there, they became in time sufficiently numerous to be beyond counting. The northern birch woods had given place to the more southerly conifers. Eventually we reached the village we were looking for, the settlement Kaaresuvanto, on Finnish highway No. 21, which runs parallel to the river forming the boundary between Finland and Sweden. We drove through the little town in the dark until we reached the river bank. After some altercation at the Finnish Customs House which had officially closed at 10 p.m., shortly before our arrival, we were permitted to take our reindeer down the steep bank onto the frozen river and cross to Sweden. Climbing the far bank into the silent village of Karesuando, we located another imposing Customs House. Banging on doors and flashing lights through windows, failed to rouse anyone. I had almost determined to enter a second country illegally that day when a pyjama-clad figure opened the door. He was the Customs and Immigration official and his behaviour was the height of courtesy. Full of apologies for the fact

*The shipment was made in 1952. The herd is now well established near Godthaab Fiord under the care of Jens Rosing assisted by two Lapps.



that the building was closed, he expressed concern at our exhausting journey through the storm from the north, and hastily added the necessary rubber stamps to my passport. Oskal as a citizen of the world needed no documents. The official expressed polite surprise that such an exalted person as a university professor would have the energy and enterprise to make such a tiresome journey. A white beard and a frock coat would, I felt, have been a more suitable uniform with which to enter Sweden than my snow-covered reindeer skin. International courtesies attended to, we parted about midnight.

Next morning I bought a ticket on Sweden's northernmost bus line and set off on the second part of my journey south to the Arctic Circle.



Totems and Songs

by MARIUS BARBEAU

National Museum of Canada photographs.



PLEASE follow me across wide spaces to the North Pacific Coast. There we will tarry for a little while in the most picturesque part of North America. Its deep fiords resemble those of Norway. They are thickly wooded with immense trees, yellow and red cedar, and hemlock, which the Indians have used for making totem poles and huge Haida dug-out canoes. The mountain peaks range from four to seven thousand feet high; they are often lost, like those of Japan, in white mists and clouds. Some of them are volcanic, as are those of Kodiak and the Aleutian Islands not far off.

The Northwest Coast Indians, unlike others on our continent, are strikingly Mongolian — of short stature and squat, stocky build. They are—or were—great fishers and sea rovers, used formerly to sitting in canoes and paddling, throwing the spear at seals, sea-lions and killer-whales. Their songs and rituals differ from those of other natives, usually reminiscent as they are of those of China. Their skin drums consist of a circular wooden hoop over which a skin is stretched tightly, similar to those of shamans or medicine-men in northeast Siberia.

The best-known tribes in this area are the Haida, Tlingit, Tsimshyan, Kwakiutl, and Noot-

ka. It is from them that the British sea-traders at an early date secured sea-otter pelts for the China trade at Canton. They became famous for their plastic arts, as carvers of totem poles, masks, and weavers of Chilkat blankets. Good collections of their carvings are preserved in the great museums of America and Europe, and the National Museum in Ottawa, the Royal Ontario Museum in Toronto and the Provincial Museum in Victoria treasure fine materials for present and future use and study.

About twenty-five years ago I spent two summers at the edge of Portland Canal which marks the frontier between the Canadian Coast Mountains and Alaska. Stationed in a cabin on the seashore close to the Arrandale (salmon) cannery, I was studying the Nass River tribes in the neighbourhood. During the summer months most of those Indians served three canneries as salmon fishermen, drifting their long nets with the incoming tides. I hired some of them in their spare time as singers, dancers, carvers, interpreters, and boatmen. I also collected specimens and totem poles for various museums, among them the British Museum, the Royal Edinburgh Museum, the Musée de l'Homme in Paris, the Royal Ontario Museum, and the National Museum of Canada. The only cabin next to the one I occupied, overlooking the seashore, was the gaol, then empty for the lack of business, I suppose, and still at the disposal of the Royal Canadian Mounted Police. I used it as a recording studio and store room for masks and totems.

Carved and painted Thunderbirds from the former Russian territories in Alaska here faced growling Grizzly-Bears from the mountain sides, grey Wolves from the high plateaus beyond the coast range, and Killer-Whales from the sea. The Indians, to whom they were more than familiar, would take up a skin drum or a bird rattle and strike up the proper tune and dance step, because each of these had its own ritual and story. For instance: *Temgyaks*

The Spukshu or Wolf and Grizzly pole of Angyedae, now at the National Museum of Canada.

Chief Skowl Arm and Chief Eagle totems at Ketchikan, Alaska.

melix taw Gedaranits, "I will dance for the first time in honor of Gidaraniits" or a dirge song of the Grizzly-Bears: *Hawhele-ane'igwaw*, "Small human-like being of my heart!"

One fine summer day I crossed the wide bay to the mission village of Kincolith or Place-of-Scalps. It was almost deserted, but for the aged and decrepit. Guided by my interpreter Charles Barton whose Indian name was Peahl, chief of the Wolf clan, I was on my way to pay a visit to the oldest and most reputed Niskae chief, Saga-uwan or Mountain. After landing on a pontoon, we followed a board walk of loose and clattering planks almost lost in a thick growth of blue and red huckleberries and wine-coloured salmonberries, past a lonely mission church painted white and sky-blue, beyond the Indian Agency with its single mounted policeman, to the rear of the village where a shabby cabin of weathered cedar slabs stood by itself. Barton knocked on the door. No answer. I was disappointed. My guide pushed the door and stepped in. I followed, to see a very old man lying on a couch—Mountain himself. His white hair reached down his shoulders, and he seemed blind, unable to sit up; after a while he could raise himself on an elbow. He was quite deaf. For a chief of his high standing, whose main crest was the Double-headed Eagle,



like that of the Tzar's imperial emblem, there was certainly no mark here of power and prestige, and little promise that he might prove of much use in my research. It took a good while for Barton to explain to this old hunter and canoe man what we were after—the long *adaorh* or epic story of his ancestors migrating down the seacoast from Alaska once not so long ago. His tribe, under the leadership of Githawn, Salmon-Eater, had travelled in six boat-loads across Bering Sea from Siberia to Alaska.

Once he was launched on to his narrative, we went smoothly ahead for a good part of the afternoon, he muttering a phrase or two, the interpreter conveying the meaning to me in English, and I recording in shorthand the story as it moved along without a hitch. But the old man slowly grew excited at the recital of the unforgotten trials of his ancestors; he raised himself on his elbows and his hands, shouting at times and singing. I feared that he might collapse, and die, perhaps. We adjourned until

Thunderbird holding a whale in its talons. Wood carving in the Rasmusson Collection at Wrangell, Alaska.



A part of the mission village of Kincolith on the Portland Canal.

The Thunderbird Chief Tralarhaet (Frank Bolton), a clan brother of Chief Mountain, recording the Niskae song of "Why don't you mind your affairs".



A group of Kincolith Niskae recording songs on the phonograph, in 1927.

Chief Mountain's totem pole, 81 feet long, being removed from Gitiks in 1928. It is now in the Royal Ontario Museum at Toronto.



the next day, and found him expecting us. The revival of his tradition had brought cheer to him and perhaps a new span of life.

Before parting, that day, I asked the interpreter Barton to enquire about Mountain's totem pole at Gitiks, a deserted pagan village in the bush close to the tidal waters on the lower Nass. This totem pole was the finest and tallest of all (over 80 feet high). I had seen it and wanted to buy it for the Royal Ontario Museum, but there must be diplomacy in such matters, for the Indians are keen traders, and some of the older people are quite touchy.

At first, the old man did not seem to understand what I was driving at. He had not, himself, seen the pole for many years. So I made it clear to him that the pole was leaning at a precarious angle, that it would soon fall down, and be lost in the crash. Nobody would ever think of it again. What a pity: such a fine pole, carved from top to bottom, with the Thunderbird at the top and the Killer-Whale in its talons; the ancestress Dzelarhons or Volcano-Woman who had brought metals with her from Asia, the Frog, the Halibut, and the Devil-Fish at her feet! Yes, we deplored, totem poles, like the people their owners, grow old and die. This one, Mountain's pole, was nearly 80 years old.

Why not sell it to me for its preservation in a fine museum in the east? There it would stand in the centre, amid other poles of the Tsimsyan, the Haida. Many people every day would see it, admire it, and learn its meaning in the *adaorh* he had just given us. The moment was critical. But I was hopeful, although I could

not easily convey my proposal to old Mountain. It was such an unusual sort of business! In the end he grasped my idea and replied by a question: Would I give him in exchange Douglas's tombstone, which he had once seen somewhere in southern British Columbia? Douglas was a noted Hudson's Bay Company factor early in the past century, and he had become the first governor of the Crown Colony of British Columbia. Yes, give him Douglas's tombstone in exchange for his Thunderbird totem pole! How could I? A totem pole to him, as for the other Indians, was like a tombstone, erected in the memory of a noted relative of the past.

To my great disappointment I had to give up my plan, for a man of the character of Mountain never changes his mind in matters of real importance to him. However, he died the next summer when again I was there continuing my research. The dirge song of the Wolves



The Thunderbird Chief Menaesk of Gitlarhdamks, a clan brother of Chief Mountain. He wears the Thunderbird crown and a Niskae blanket.



(for his ancestry was both Thunderbird and Wolf) was sung over his body while it was taken in a boat across the bay. This dirge song, *Hano!* was already recorded on the phonograph for the National Museum.

After his death and burial, I sought more information on the career of Mountain, a real veteran of the fur trade and tribal warfare on the North Pacific Coast. And here is a story about him that could not easily be forgotten.

When still young, Mountain was deeply wounded in his pride as a high chief because of his wife's desertion. Quite attractive, and perhaps ambitious, or merely fickle, the young woman had forsaken her native rank for the favours of Captain McNeill, a Hudson's Bay Company official who often visited Portland Canal to further the interests of his company in its contest for pelts with its rival, the Russian American Company, of Alaska. She had gone to live with the fur trader down the coast at Victoria.

To wipe off his shame in good style among his people, Mountain waited for his opportunity in a big tribal feast in his village of Gitiks. There he held up in his hand ten beautiful marten skins, and sang to an old tune a new challenge which he had just composed to cast ridicule on the fair deserter. He sang with sarcasm: "*Ha-eyehl-tahu . . .* Wait and see what a chief can do! Wait, O sweetheart, that you may learn how, after my humiliation be-

cause of you, I have again raised my head! Wait, O flighty one, before you send me word of how you have failed in your foolish escapade and pine once more for my love! Time is now ripe, O woman who would rather belong to the bleached Victoria tribe (of white people) for you to send me a bottle of Old Tom. For my part I despatch to you this small handful of mere beaver skins."

Actually there was more than a "small handful", and the skins were even more valuable than beaver. They were picked marten such as an indignant and wealthy chief could sacrifice to heap ridicule upon a woman unworthy of him. She would surely, after her desertion, be unable to reciprocate in kind. The only way for her to redeem her reputation, according to native standards, was to return a gift of still greater value. She would certainly fail and be covered with shame to the end of her life. But, unexpectedly, she did not.

Her gift, which the next year her brother Niskinwætk flung to her former husband, was a Haida canoe carved out of a huge red cedar tree. With the help of Captain McNeill, her white mate, she had changed the "bottle of Old Tom" demanded by Mountain to a trade canoe, decorated at the prow with the Grizzly-Bear, her own heraldic emblem. As the canoe was actually given in a feast to the challenger, she had the best of him. Mountain had wanted to discredit her in the eyes of her people, because he was proud and she had shamed him. Now once more she had heaped humiliation upon him, and the tribe was not sure that he had the wit and the means to retaliate.

He had. After all his wealth in pelts, copper shields, blankets and trade goods was gathered, he invited the neighbouring tribes and made it known that he was about to cast off his unfaithful wife in a way that would brand her forever as worthless. While he lavished presents upon his guests at a feast, particularly upon those who had laughed at him, he sang a song composed for the occasion—a taunting song:

"Hush! stop your idle chatter! Why do you mind my affairs?" *Haguhlen hagwiyehe!* And the people had to repeat the refrain in chorus, after he had sung:

"Why do you gossip about me? Why do

The Salmon pole of Kanees, at the village of Angyedae on the Nass, later removed to the Royal Scottish Museum, Edinburgh.

you point your finger at me, when your hand is unclean? I speak to you, woman of Salmon-Weirs?"

The chorus: "Hush!, stop your idle chatter!"

Mountain sang once more:

"Why do you single me out as the only black sheep? For this alone must I admit that I am lost like the rest? Oh: Stop your idle chatter! I speak to you, women of the Place-of-Scalps!"

The Chorus: "Hush! stop your idle chatter!"

Mountain: "You waste your breath over my love affairs. Why should I mind you when my heart pines away? I have not seen my young sweetheart for a full moon—the Hutsinee beauty that had made a Christian of me!"

The chorus: "Hush, stop your idle chatter! Why do you mind my private affairs?"

Captain McNeill's native partner now smarted under the insult far away though she lived from the scene of her disgrace. She made up her mind to fight it out to the end with her former lord.

As her brother Niskinwaetk, with whom she shared the leadership of a Grizzly-Bear Clan, had recently died, she decided to erect a totem pole in his memory and, without the help of Mountain, assume the leadership of her clan. She would raise a fine totem, enhance her prestige, and wipe off the shame of her dismissal by her former husband.

As the best carver of totems on the Nass River was Oyai, of the Canyon tribe on mid-river, she secured his services for about a year, during which he carved a pole for her, the pole later known as the Second Pole of Kwarhsu at the village of Gitrhadeen.

When the carving was ready, she came in person to the Nass, bringing much property with her, and had the totem erected to the memory of her brother, in the midst of a great celebration. On this occasion, she assumed the name and high rank of Niskinwaetk, and she stood on a par with her estranged husband Mountain; he had lost his power over her. She had become the leader of the Grizzly-Bear clan, just as he was, of the Thunderbirds or Eagles.

Her totem pole was a fine memorial, at the head of a splendid row of totems. Seventy years after it was raised I discovered it, surrounded by a thick growth of wild crabapple trees, still standing defiantly in memory of the Grizzly-Bear chief who would not be downed by a Thunderbird. Its heraldic figures carved out of red cedar were weather-beaten and covered with green moss, yet savage and expressive. It was clear that Oyai, its carver, deserved his reputation as the best totem-pole carver of his generation on the Nass River and elsewhere.

I had no difficulty in buying it for the Canadian National Railways, whose president Sir Henry Thornton presented it to the Trocadero Museum, now the Musée de l'Homme, where it stands, in Paris.

The Mountain pole of the abandoned village of Gitiks on the lower Nass River, had been purchased the year before for the Royal Ontario Museum. The old chief had died, and his heirs entertained no feelings as he had, for carved memorials to their forbears.

The Grizzly-Bear totem of Niskinwaetk erected by Mrs. McNeill which was later removed to the Musée de l'Homme in Paris.





The Maritime Museum of Canada

by Rear Admiral H. F. PULLEN,
O.B.E., C.D., R.C.N.

National Defence photographs—R.C.N.

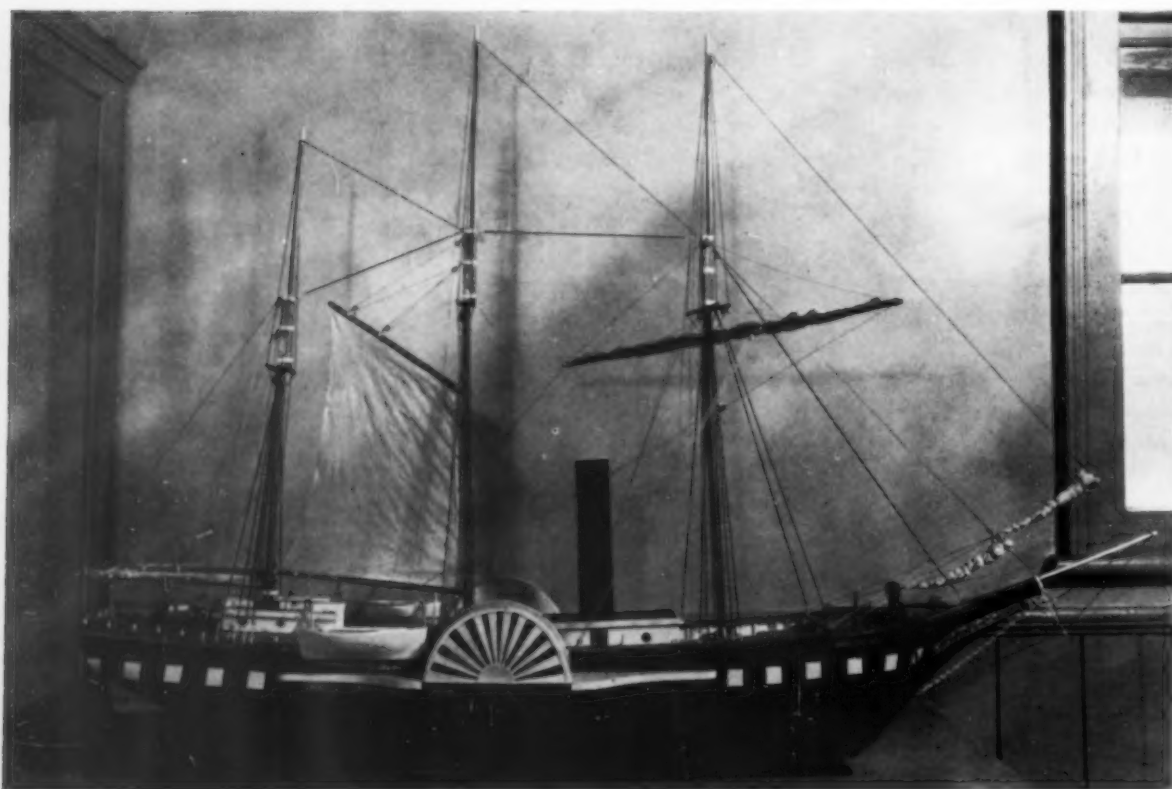
JOSEPH HOWE, one of Nova Scotia's most famous sons, once wrote:

A wise nation preserves its records, gathers up its muniments, decorates the tombs of its illustrious dead, repairs its great public structures and fosters national pride and love of country, by perpetual reference to the sacrifices and glories of the past.

This nation, as we know it today, is a child of sea-power. The two races that settled the country drew their strength from sea-borne commerce and immigration. Even now these are major factors in the nation's growth. We cannot contemplate the sacrifices and glories of the past without becoming conscious of our enormous debt to the sea and to ships and the men who sailed them.

Aware of this and of the need to preserve for posterity records and relics which could foster national pride and love of country, a small group of naval officers serving at Halifax in 1947 took steps to establish what is now known as the Maritime Museum of Canada. The time was ripe for historical souvenirs were beginning to come to light, and in the early postwar era numerous naval trophies—Canadian, British and German—were available.

As a result of the war, a great many people had come to know the still young Royal Canadian Navy and were familiar with its important work in the Battle of the Atlantic. There was a strong conviction among the naval officers, however, that something should be done to preserve and display tangible evidence of that



The "Royal William", built and launched at Quebec in 1831. She set a record in 1833 by crossing the Atlantic in twenty-five days using steam all the way.

Her Majesty Queen Elizabeth II (then Princess Elizabeth) and H.R.H. the Duke of Edinburgh signing the visitor's book in the Museum.



work and the manner of its accomplishment. At the same time, it was felt that an attempt should be made to create among Canadians a greater awareness of the vital connection between the sea, itself, and the history of the nation. Prior to 1939 that knowledge had been possessed by few people.

Captain James Plomer, O.B.E., D.S.C., C.D., R.C.N., was the originator of the idea of the museum. In the fall of 1947, while serving as Commander of the Dockyard and King's Harbour Master at Halifax, he suggested that it be started. The suggestion was supported by his fellow-officers. The late Rear-Admiral C. R. H. Taylor, C.B.E., C.D., R.C.N., who was then the Flag Officer commanding Atlantic Coast, gave his blessing to the ambitious project. He also made available a small brick building in the Dockyard.

The first meeting of those interested in the museum was held on 8th January, 1948. A plan

was decided upon and was circulated among the ships and naval establishments on the Atlantic coast. Support and assistance soon came from interested civilians, including Dr. D. C. Harvey of the Nova Scotia Provincial Archives, Mr. Thomas Raddall, the distinguished author, of Liverpool, N.S., and Mr. D. K. Crowdis of the Nova Scotia Museum of Science.

On 8th December, 1948, the Museum was officially opened by the present Chief of the Naval Staff, Vice-Admiral E. R. Mainguy, O.B.E., C.D., who was at that time Flag Officer Atlantic Coast. The first official civilian visitor was the Premier of Nova Scotia, the late Hon. Angus L. Macdonald, whose encouragement, support and assistance proved invaluable to the new establishment. With a commissionaire acting as guide, the museum, not yet open to the public, began to function in a very modest way.

It was a somewhat audacious enterprise for,



Models of H.M.S. "Royal Alfred", an early 18th century ship of the line, and the Confederate raider "Alabama".



with few exceptions, its supporters were rank amateurs, ignorant of the intricacies of museum management. Its successful inauguration was due in no small measure to the friendly guidance of officials of the Provincial Archives and Museum. There were no funds. For some years it was sustained solely by the enthusiasm of a small number of naval officers and men, and sympathetic civilians.

Gradually various articles of historical interest were acquired. Cutlasses and muskets, old naval buttons, ancient charts and ship models, old log books, and souvenirs of the two world wars found a resting place in the small brick building beside No. 4 Jetty in the Dockyard. Through the generosity of certain officers a remarkable set of glass negatives, depicting naval life at Halifax in the Victorian era, was purchased. Slowly the collection grew.

At a meeting held in April, 1948, it had been decided to charge no admission to the museum and to call it "The Maritime Museum". (Two

Uniform worn by Vice-Admiral Sir Henry William Bruce, R.N., who in 1855, while Commander-in-Chief Pacific Station, was instrumental in having the first building erected on the site of the present Naval Dockyard at Esquimalt, B.C.

years later the name was changed to "The Maritime Museum of Canada" and His Excellency the Governor-General graciously consented to become Patron.) The objectives of the institution, formally drawn up, were:

- (a) to assemble and properly preserve in one place relics, documents and pictures associated with the maritime history of Canada;
- (b) to enable officers and men of the Navy and Merchant Navy to become better acquainted with the maritime history of Canada, and thus increase pride in their service and traditions; and
- (c) to provide the general public with a museum which depicts the historical relationship of Canada with the Naval and Merchant Services, thus creating a greater awareness of sea-power as it affects the security of the nation.

In addition to forming a record of the sea-story of Canada, it was hoped to include something of the story of the ships and bateaux on the inland waterways that contributed so largely to the development of the country.

A very great deal of valuable information and material has been forgotten or destroyed. It is the fervent hope of the museum's authorities that they will be able to unearth and preserve, or even revive, much that will have meaning and wide interest in the future. An example of what can be done is found in the story of the "York" boat, which played so important a role in the early settlement of the West. No plan of this vessel could be discovered, but fortunately one of the boats was still in existence at Lower Fort Garry. From it a complete set of plans was produced by the Naval Constructor-in-Chief at Ottawa. These have been preserved, together with an accurate model of the boat, in the museum at Halifax.

A great deal remains to be done. What of the ships that contributed so much to Canada's early history? What did Cabot's *Mathew* look like? What of the ships of Cartier and Champlain? What of the original *Ontario* built at Oswego in 1755, one of the first British vessels to fire a gun on Lake Ontario? What is known of H.M.S. *Neptune*, Admiral Saunders' flagship at Quebec? (In her great cabin history

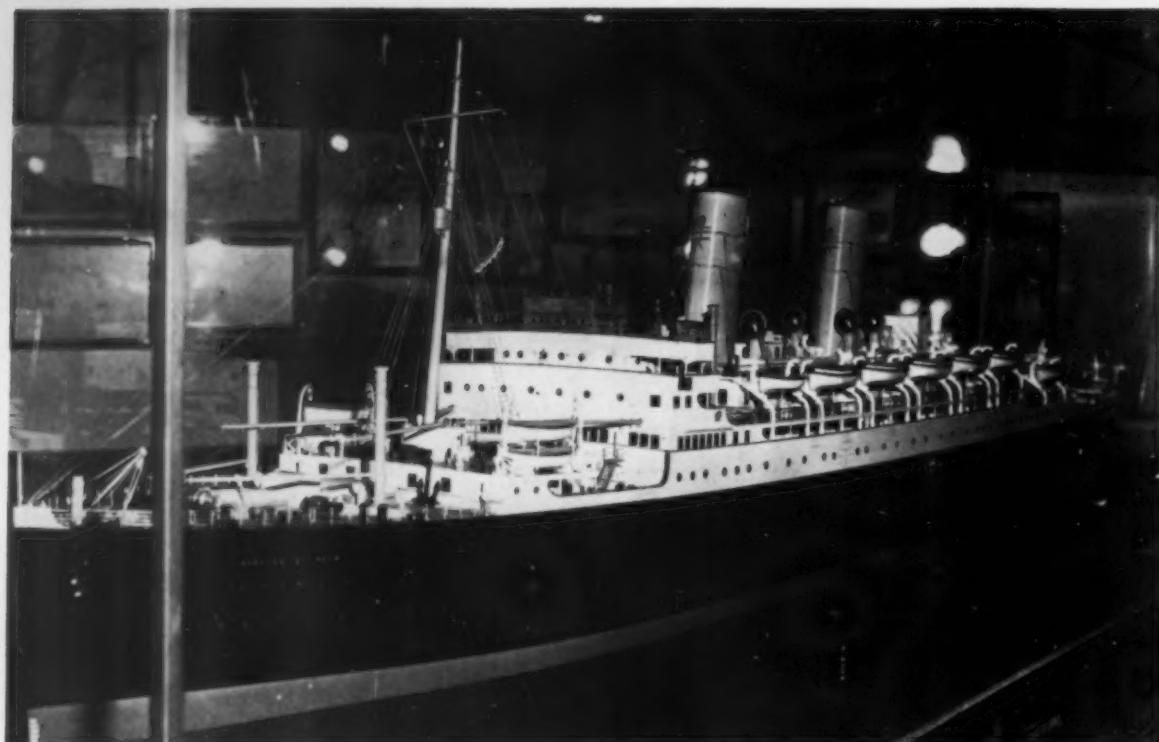
was made, for it was there that Saunders and Wolfe planned the combined operation that culminated on the Plains of Abraham with the capture of Quebec.)

Do plans exist of the bateaux and "Durham" boats of the St. Lawrence and Ottawa? What manner of vessels were the gunboats that defended Canada on the rivers and lakes in 1812-14? What is known of the lake schooners, to say nothing of the golden age of sail in Quebec and the Maritimes? These are some of the questions to which the authorities seek answers.

In its earlier years a relatively small number of people visited the museum because of its position in the Naval Dockyard. A more central site was needed. Two events unexpectedly contributed to the solution of the problem—the construction of the Angus L. Macdonald Bridge across Halifax Harbour and the renovation of the Citadel by the Department of Northern Affairs and National Resources. The museum building had to be demolished to make way for one of the piers of the bridge, and space was offered in the Citadel, to which the museum was moved in May 1952. By the end of that year over 42,000 visitors had climbed the hill



Model sheer-legs, a device consisting of three spars of wood lashed together at their upper ends and extended below, carrying tackle for raising heavy weights. This was probably used in H.M.C. Dockyard, at Halifax, N.S.



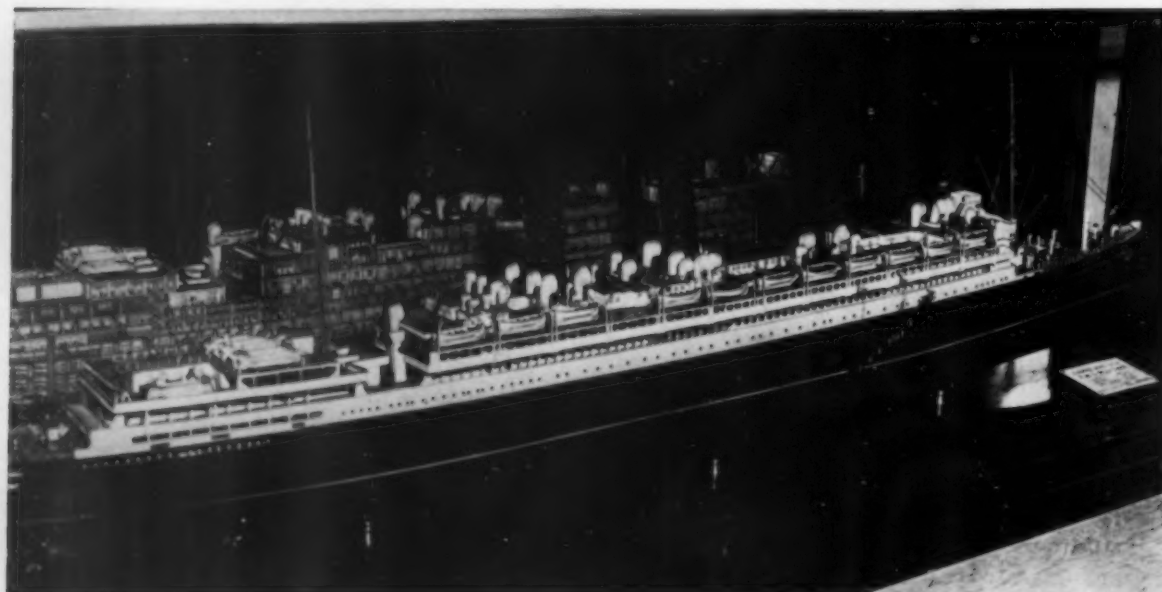
A model of the Canadian Pacific S.S. "Duchess of York" which has made many crossings between Canada and Britain on transatlantic passenger service.

Below:—A sennit or straw hat, as worn by sailors in hot weather or on foreign stations from before 1857 until 1921.

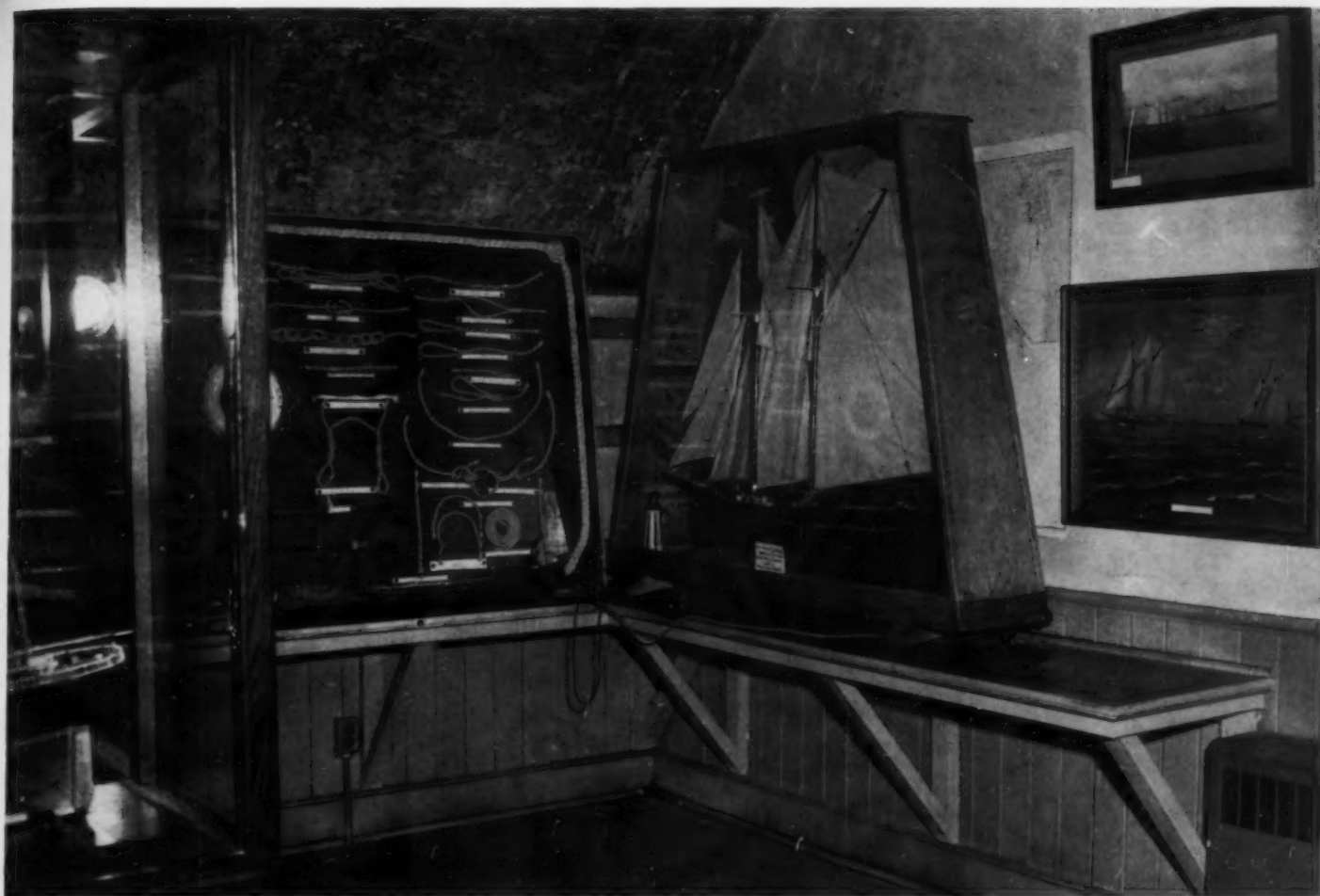
to inspect the Citadel and visit the museum. With the increase in attendance offers of models, pictures, and items of maritime interest began to pour in. During the next two years the number of visitors multiplied. In 1954 over 102,200 persons signed the register.

When the museum was moved in 1952 it was quite apparent that it would need funds if it were to continue. It was not policy to charge admission and a collection box seemed too uncertain a source of revenue. Provincial and civic authorities were asked to assist. They responded generously. In addition, donations were received from naval personnel and naval veterans. As a result, it became possible to employ a full-time curator and to make many improvements; proper show cases were built and better lighting provided.

One room is devoted to men-of-war and contains pictures as well as some models of German



R.M.S. "Aquitania", launched in 1913, one of the largest ships of her day. When broken up in 1950 she had steamed over 3,000,000 miles and carried over 1,198,000 passengers. The model is cut in two to show the interior which can be seen in the reflection.



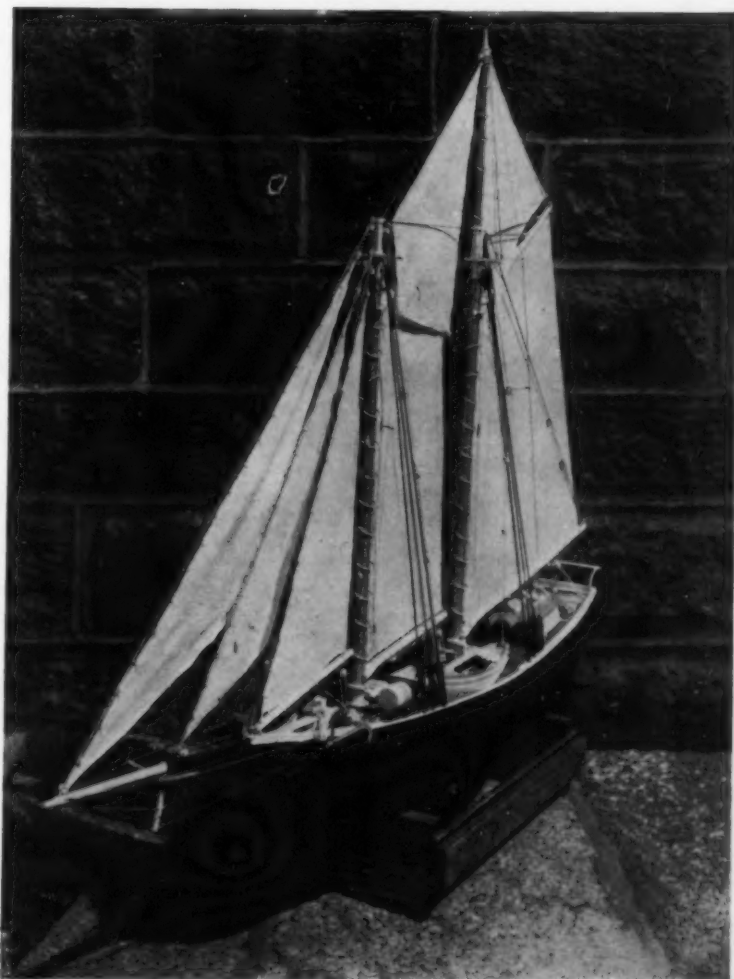
The Bluenose Room houses the collection of models and relics of Nova Scotia built ships. In the case is the famous schooner "Bluenose" which, before being lost in a storm off Haiti in 1946, repeatedly won the International Fisherman's Race for Grand Banks schooners.

destroyers. The pre-war Royal Canadian Navy is represented by a set of model ships constructed by naval officers and men. Models are being made of H.M.C. ships *Niobe*, *Rainbow* and *Aurora*, and of the first Canadian submarines. It is planned that eventually there will be a complete record in accurate models of the development of our Navy.

The Canadian Pacific, Canadian National and Cunard Steamship Companies, Furness-Withy and Company, and Canada Steamship Lines have all donated models of those of their ships well known in Canadian ports. A modest start has been made in collecting half-models of ships built in Nova Scotia. Special efforts are being made to record the vanishing Grand Banks schooners and the famous *Bluenose* is well represented.

As a great deal of interest has been roused in early Canadian maritime history, models are being built of the ships that fought in the wars of the eighteenth and nineteenth centuries.

The Lunenburg fishing schooner "Volunteer" built at LaHave, Nova Scotia in 1887.



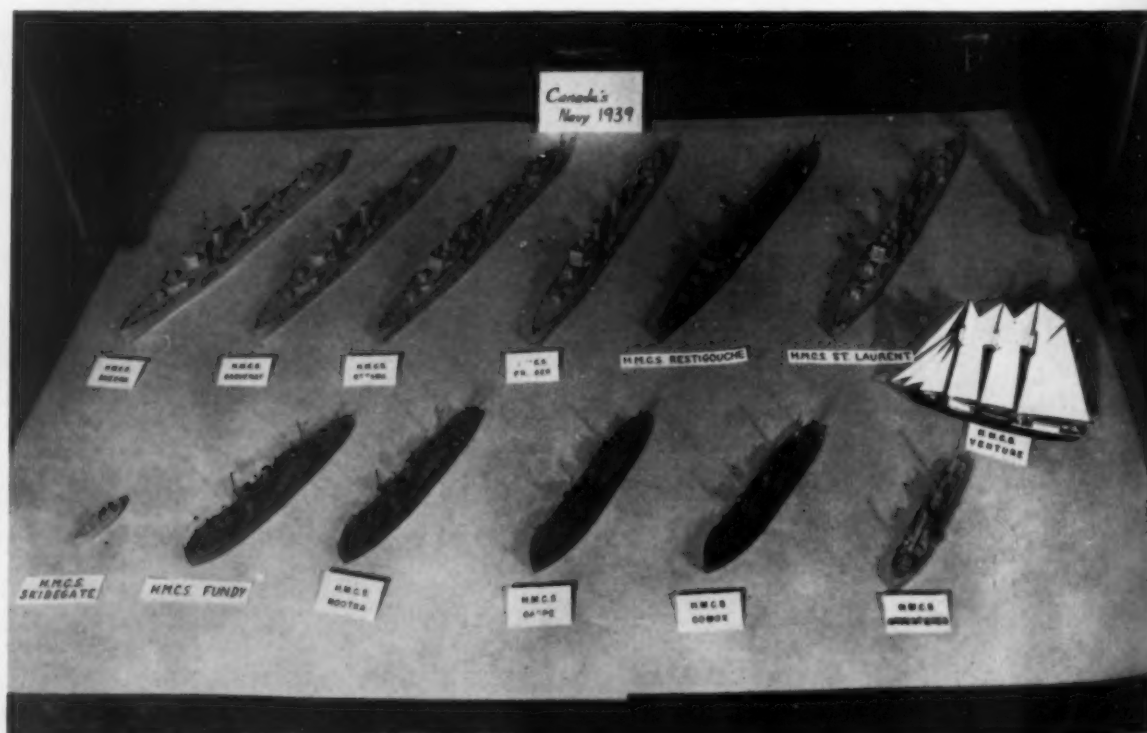


That is a beginning. But to complete in ship models the story of Canada and the sea, it will be necessary to go back to the Vikings and their famous "long ships".

Today, under the patronage of His Excellency the Governor-General, the museum is well established. Its Honorary Presidents include the Minister of Northern Affairs and National Resources, His Honour the Lieutenant-Governor of Nova Scotia, the Premier of Nova Scotia, the Chief of the Naval Staff, and His Worship the Mayor of Halifax. Its President is the Flag Officer Atlantic Coast. It is administered by a chairman and a board of ten

members, assisted by an advisory committee. The Chairman is elected annually. The board consists of naval and civilian members and a representative of the Halifax Branch of the Naval Officers' Association of Canada. The advisory committee is made up of persons interested in and willing to assist the museum, and nominated by the board or advisory committee.

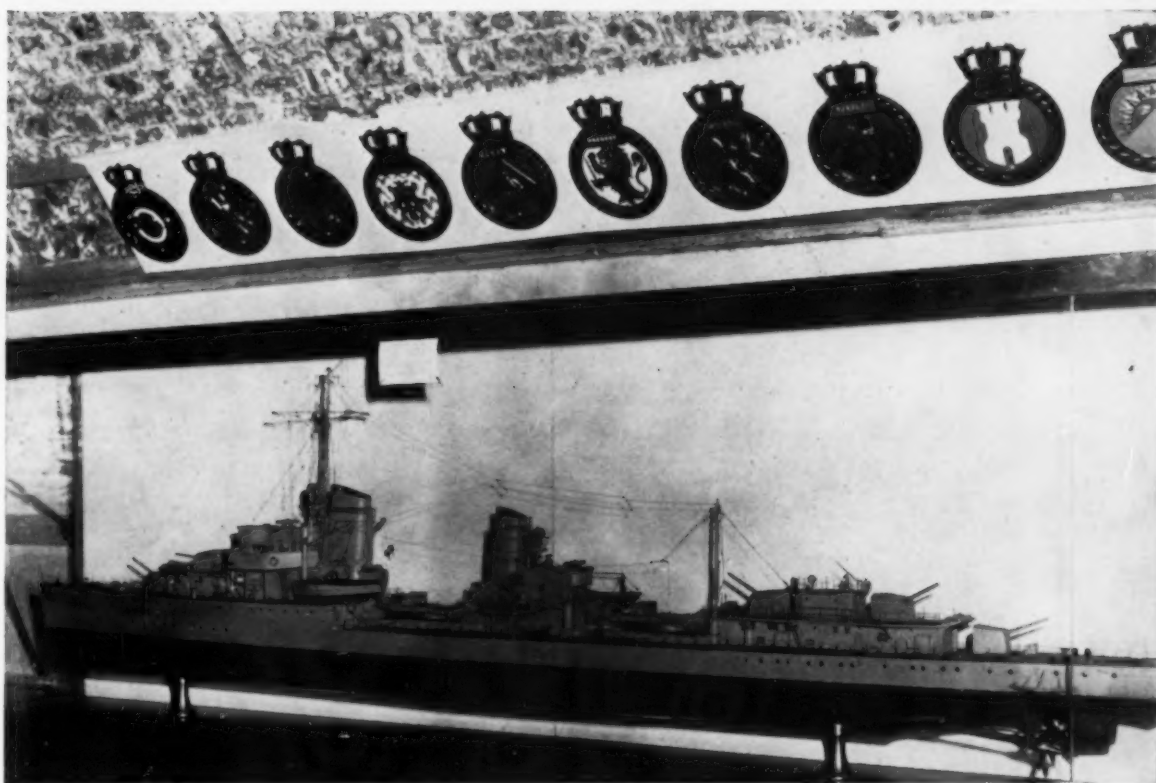
Those responsible for the establishment of the museum may look with some pride on the growth and accomplishments of the past seven years. The future appears bright. It is hoped that one day the museum in the Citadel at



Models of ships in commission in the Royal Canadian Navy on the outbreak of war in 1939.

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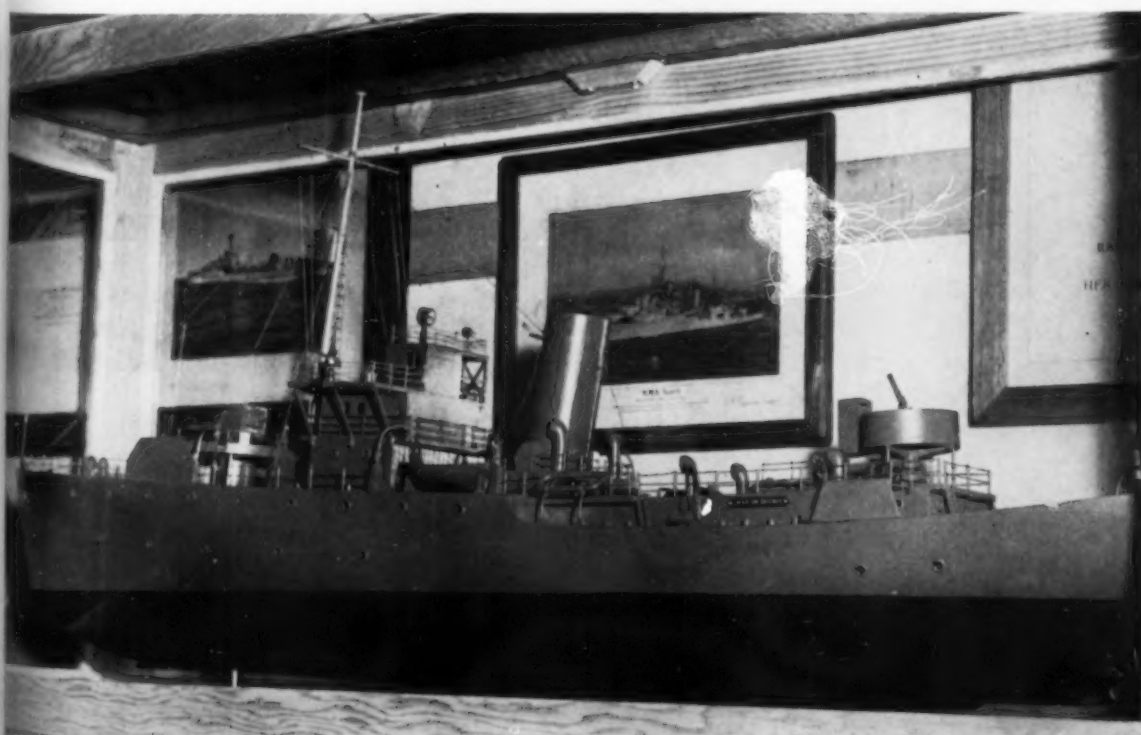
A model of a German "Narvik" class destroyer, a type used during the Second World War. Around the walls, above the show cases, are displayed the decorative badges from different ships.



Halifax will do for Canada what the National Maritime Museum at Greenwich is doing for the Old Country. It is interesting to note that the seed sown in Nova Scotia in 1947 has sprouted also in British Columbia. There, fostered by the same naval enthusiasm, a Maritime Museum has been started in the dockyard at Esquimalt, a region rich in maritime history.

In the course of more than three centuries Canada has risen from the wilderness that met the eyes of its sea-borne discoverers and explorers to become a great nation. In colon-

ization, in mercantile enterprise, and in conflict, stout-hearted seamen have contributed in great measure towards this phenomenal progress. Little could have been accomplished without the steady maintenance of sea-communications. We owe an enduring debt to ships and to the men who have sailed and continue to sail them. The careful collection and display of relics and documents pertaining to our maritime affairs will help to make Canada's sea-story as familiar as it deserves to be. This is the basic objective of the Maritime Museum of Canada.



H.M.C.S. "Ville de Quebec" — a Canadian corvette of the Second World War.



Music-loving Tarascan children pose beneath great fishing nets. They enjoy singing old folk songs. Many of their elders, though illiterate, read music and play in village orchestras.

Experiment in Education

by JEAN E. STENTON

Photographs, except one, by the author

CANADIANS contribute every year to UNESCO, by co-operation in projects of the organization and by financial support. Canadians therefore have an interest in one of the most interesting laboratories in the world at Patzcuaro, Mexico, a UNESCO experiment in education. Here at the International Centre for Fundamental Education known as CREFAL (from the initials of its Spanish name) the students work not with test tubes, but with

people. This is an attempt to salvage a generation by giving it the minimum education needed to improve its way of life. Twenty Tarascan villages with 10,000 people are used to test the theories and programs to raise the standards of living.

Fundamental education is an emergency solution designed to help masses of illiterate adults and children in countries whose educational facilities have been inadequate.

Films on agriculture are another important contribution from Canada to Patzcuaro. CREFAL instructors in audio-visual work have already used four of the National Film Board reels on certified seed, quality beef, and farm work on the prairies, from the Embassy in Mexico City. The Canadian sound track is blocked out and a Spanish one substituted. CREFAL considers these films the best in the field and the Indians of Mexico are learning new methods from Canada's high standards of agriculture.

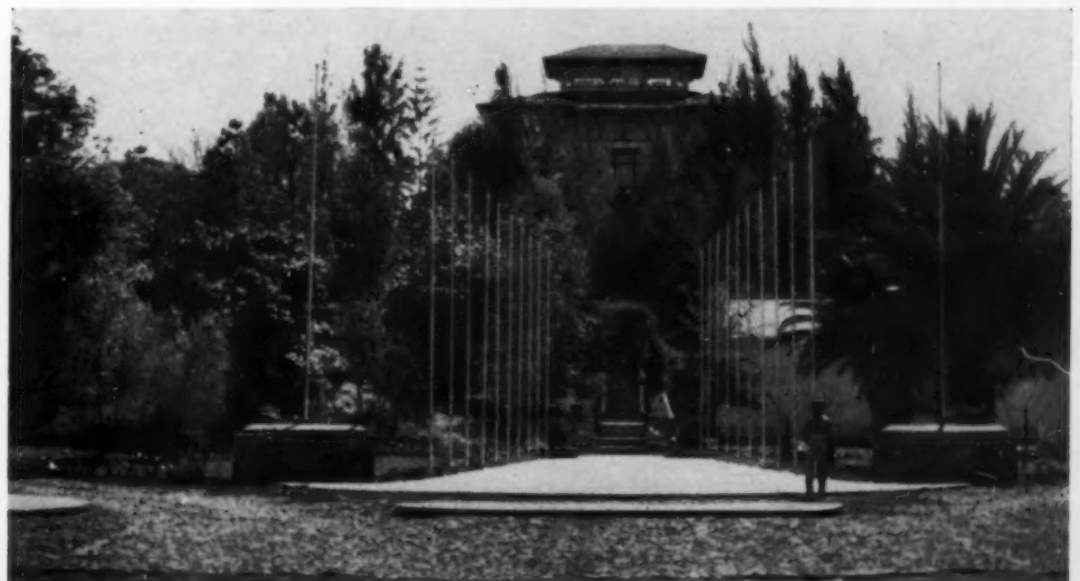
On 9 May, 1951, the twentieth and the sixteenth centuries met formally for a few minutes in public at Patzcuaro, a quiet little Mexican town still resting from the days when it was the busy capital of the Tarascan Indians' Michoacan Empire. The twentieth century was represented by the President of Mexico, Miguel Aleman, who had made the 250-mile trip west of Mexico City to inaugurate the world's first international training centre to help raise the standard of existence through education. Patzcuaro declared a holiday for the opening and some 4,000 people (the sixteenth century) came by car, by burro and on foot from the town and villages to the plaza for the ceremonies. Mexico has played a large part in the establishment of the centre, supplying land, buildings and local services. The school centres around *La Eréndira*, a graceful mansion donated by Gen. Lazaro Cardenas, former president of Mexico, along with adjacent buildings and sixteen acres of land. *La Eréndira* was named after a Tarascan chief's daughter who went down in the history of her people by successfully escaping the Spanish invaders on a horse she stole from under their eyes.

Students now come to CREFAL from all but one of the twenty-two Latin American countries, only the Dominican Republic not being represented. They join the centre in groups of sixty-five every year in April and leave in November of the following year after nineteen months at CREFAL. During 1954, with the addition of part-time students, the enrolment was raised from 120 to about 200. Pakistan, which has a similar illiteracy problem, was sending ten students for the first time. The difficulty of language is overcome by the assignment of a full-time interpreter to teach Spanish.

There are twenty villages co-operating with CREFAL. All are old, some pre-Conquest. In many ways their life has not changed at all since before the Spanish came. The greatest obstacles to progress are indifference, apathy, and resignation bred of tradition and inadequate nutrition, mental as well as physical.

The meaning and scope of fundamental education is not simply learning the "Three Rs". That is a small part of it. It is essentially concerned with basic human needs, food, reproduction, clothing; and to a lesser extent, communications, general knowledge, and development of human potentialities. Under the CREFAL plan, the students operate at the school and afterwards not as individuals, but as teams. A typical team from Patzcuaro may include an adult educator, a sanitary engineer, a nurse, a rural school teacher and an agricultural expert. There are five on each team and they attack such problems as health and better farming methods. Each works in one or two communities and each member of the group does a different thing but has to have a

The entrance to the United Nations School at Patzcuaro takes on a festive look when flags of students' countries wave from the slender poles flanking the avenue.





As improved agricultural methods mean more and better food, CREFAL instructors teach farmers how to select seed. These men are waiting to obtain their supplies.

CREFAL photograph

little knowledge of the other jobs too. Every Friday, all the teams and staff gather and discuss the progress and problems of the week.

Some of the communities used for experimental purposes are still opposed to strangers. At first students had a very difficult time. The key which finally unlocked the door for them was recreation. The Tarascans had never learnt how to play.

When the teams first went in, they had to play games by themselves. The villagers would not even appear. But they persevered and gradually boys began to sidle up and watch. Then the CREFAL people would toss a ball to someone on the sidelines. That was the beginning. As time passed, they visited the houses and finally a whole community became interested. After a year's work on the island of La Pacanda, the results roused the envy of many of the other villages and they began asking the students to come and work with them. Now the basketball court is one of the gathering places in all the villages.

"We operate in a special way," one official said. "We make them do the work themselves so that when the team goes they will be anxious to continue on their own. Usually the first projects are latrines and water purification. One of the big things that gave us a break was an outbreak of cholera among the pigs. We had a vaccination campaign and offered

our help. Ever since that we have been friends. Even though the people are very poor and have to buy their own vaccine they are so impressed with the results that they now come voluntarily and ask for it."

At one of the villages, a simple textile factory has been established under the direction of a German and a Czech, specialists from the International Labour Organization. The textile machinery is almost completely made in the local carpentry shop, formed with the assistance of the one at CREFAL. The complex machinery, such as motors, was brought from outside. By and large the factory is a local product designed to match the low cultural level of the villagers and to show them in a simple way how to manage technical processes and to organize their collective efforts economically. The people have improved cloth; they have a product for which there is a large demand; and forty or fifty people have more money than ever before. The village as a whole is beginning to feel the effects of increased income.

"One of the biggest jobs which the school staff has had to cope with is the attitude of the students," Sr. Luciano Hernandez, a fundamental education specialist, explained. "Our objective is to train students to go back to their own countries where they must work for their governments for three years. First we

have to change the attitude of these students and that is the most important and difficult part. All of them are trained as teachers and in service when they come to Patzcuaro and they think in terms of lectures and pedagogy. It is a positive shock when they find pedagogy is not important and will not work in the villages. Economics, social diseases, lack of seeds and tools are the crying problems. CREFAL training must wipe out the 'school teacher' attitude."

The first step is to gain the confidence of the villagers. The students are taught how to work with them to create a new approach to spiritual and moral changes; how to consider all the traditions, superstitions, prejudices, and religious beliefs forming the cultural pattern of the people. The second step is how to meet the needs of these people.

"Sometimes you think you have gained a little and then something happens which makes you wonder if you have progressed at all. Then when you are completely discouraged, you find some place where you have made greater gains than you knew," Sr. Hernandez said. "Last February some of us attended a fiesta in one of our villages. All the old people were dead

drunk, but the young ones who were in our sports club in CREFAL work were sober. When we asked the young people about it, they said: 'the old ones can never change the habits of a lifetime, but when the new generation is in control, wait and see'."

"I visited another village during the spring vacation and I was amazed to find the people painting their houses and fixing up the town. I asked why and the youthful head man told me: 'well now you see we young ones are in control and we will get things done'."

In view of the emphasis on the voluntary change in attitudes and the adapting of the existing culture, fundamental education moves very slowly. Measured in terms of irrigation works, roads, community buildings, and such things, considerable advance has been made. But the greater achievements are more difficult to assess. There is no set formula. The people at CREFAL are pioneers. It is the first school of its kind and they are forced to use the trial and error method. It will be years before notable results appear in printed reports. But taking all these things into consideration, the CREFAL fundamental educationists are pleased with the overall progress in the three years of operation.

Tarascan villagers come to Patzcuaro on market day to sell their goods and exchange gossip. Vegetables are laid out on clean reed mats called petates. Influenced by the visiting teams, the Tarascans are becoming more friendly with strangers.





The swimming lynx

Lynx Ahoy

Photographs and note by GERHARD H. EICHEL

IN JUNE last year I went to Fort Babine in northern central British Columbia to do a survey job for the B.C. Forest Service. My two helpers and I were travelling to the Fort by boat, down the length of Babine Lake, just after the ice had gone, when we were amazed to see a lynx in the water. He was trying to swim across the narrowest part of the lake, about a quarter of a mile, and fighting quite desperately against increasing wind and waves. Talking later to hunters and trappers, all agreed that it was most unusual to see a member of the feline family taking to the water, and this was confirmed by zoologists.

I had the idea of going alongside the lynx to windward, to give him shelter for an easier crossing, though I feared he might turn away from us and swim in circles. Instead, he gave us a shock. He did not hesitate to approach our thirty-foot river boat with rattling out-board motor and, clawing into a tarpaulin dangling over the edge of the boat, he pulled himself up and came aboard!

We were afraid of being attacked by an animal known to be extremely ferocious and fled into the stern, seizing oars for self-defence. The lynx, however, moved into the shelter of our link boat on top of the load and curled up like a kitten. He seemed nearly frozen and shivered all over; he half-closed his eyes, but kept them always turned in our direction. The sun and wind dried him fairly quickly and half an hour and about five miles later I gave him the chance to choose between freedom and staying with us.

As soon as the boat touched the overhanging willows on the shore he sprang up, looked around, hesitated a few seconds, then bounded away into the dense undergrowth of the aspen forest. I wondered if later he was sorry that he had met us, for he was back on the same side of the lake that he had come from.

A few weeks afterwards I met two moose bulls swimming across the lake, but this was a more normal experience, with none of the excitement of meeting a lynx, and fortunately they showed no desire to come aboard.



Fellow travellers on Babine Lake, British Columbia



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THE TRAVEL CORNER

Tours of Gaspé Peninsula

During July and August four-day all-expense tours of the Gaspé Peninsula will be offered jointly by Canadian National Railways and the Gaspé Tours Line Limited. The tours commence officially at Mont Joli which may be reached aboard the C.N.R.'s "Ocean Limited" or "Scotian". There you enter one of the new six-passenger automobiles owned by the Gaspé Tours Line and set out on the 550-mile circuit of the Peninsula. Bilingual drivers, who are familiar with the history and special attractions of the region, answer your questions and draw attention to things of interest. Each traveller is allowed to take along one piece of luggage; the rest is stored free of charge at Mont Joli. The company carries insurance covering its passengers.

The fare for adults is \$95. This includes automobile transportation, meals, hotel accommodation and a boat trip to Bonaventure Island. Tips, of course, are extra. Children under 12 years of age pay only \$80. Exclusive use of a car may be obtained,

but this is somewhat more expensive. During July and August the tours are operated daily from Mont Joli. However, it is possible to arrange to take them also in June and September, provided at least two persons are going. A brief summary of the itinerary follows:

1st day — Arrive by C.N.R. in the morning at Mont Joli and have breakfast at the Commercial Hotel. By Gaspé Tours Line car along the shore of the St. Lawrence most of the day, passing through various picturesque old villages. Lunch at Chateau Cap Chat, then on to Rivière Madeleine, where you stop overnight at Hotel du Golfe.

2nd day — Drive to Fox River, an interesting fishing village, then on through the Shickshock Mountains to Gaspé Village near the extreme tip of the Peninsula. Lunch at Battery Park Hotel, then on over the hills and down to sea level to the delightful village of Percé. Passengers stop here for a day at the Au Pic de l'Aurore Hotel.

3rd day — Sightseeing at Percé in the morning and a boat trip to Percé

Rock and Bonaventure Island, a bird sanctuary. In the afternoon by car along the Gulf of St. Lawrence and Baie de Chaleur to Carleton, a popular summer resort. Here you stay overnight at the Hotel des Sables Rouges.

4th day — Time for a morning swim, then by car along the shore of the Baie, stopping for lunch at the Restigouche Hotel at Matapédia. Then on through the beautiful Matapédia Valley, reaching Mont Joli early in the evening to dine at the Commercial Hotel before catching your train.

Over the Arctic

On June 9 Canadian Pacific Airlines will make their first commercial flight from Vancouver across the Arctic to Amsterdam. Their schedule calls for one flight a week in each direction. Eastbound aircraft will leave Vancouver every Friday, arriving at Amsterdam 18 hours and 30 minutes later. A refuelling stop will be made at Churchill, Manitoba. Flights from Amsterdam will be made every Saturday evening, so that passengers reach Vancouver on Sunday morning. Sondrestrom, Greenland, is the refuelling station on these trips. The route over the Arctic is about 1,000 miles shorter than any alternative one from Vancouver to Europe. Passengers will have a choice of first class or tourist accommodation on the planes travelling this new route.



The Gaspé Peninsula highway dips down to sea level to wind through the village of l'Echourie.

Quebec Publicity Bureau photo.

Festival at Stratford, Connecticut

If all goes well, Stratford, Connecticut, will have a Shakespearean Festival this summer for the first time. An octagonal playhouse (after the Elizabethan style) is being erected there. The building is to have all the latest equipment, including a particularly fine stage with a unique forestage 92 feet long. An apron is to extend 14 feet from the latter into the orchestra section. The theatre will seat 1,550 people, 550 in the balcony and the rest below. It is being constructed of steel and fire-resistant wood and is situated in a 12-acre park on the banks of the Housatonic River. An 18th century mansion on the premises is to be used as an academy of acting. The new theatre is to be known as the American Shakespeare Festival Theatre and will be operated as a non-profit educational foundation. The Festival program had not been announced when we went to press, but it was understood that several plays would be presented and that some of the veteran actors and actresses of the American stage would take part in them.

New Service for Ottawa

On June 1 Trans-Canada Airlines will inaugurate direct flights between Ottawa and Winnipeg, Calgary and Edmonton. It will be the first time that the nation's capital has been on an important continental air route. In the past passengers have been obliged to change planes at Toronto. T.C.A.'s new Vickers Viscount aeroplanes will be used on the new route.

Grayson Services Booklet

"Going to Britain in 1955?" inquires a booklet published by Grayson & Company (London) Limited. If you are going there, you might like to obtain a copy of the booklet. In its 16 pages you will find a great deal of helpful information under such headings as Packing Suggestions, Money, Customs, Hotels and Restaurants, Shopping, Theatres, How to Tip, and so on. The booklet is a very practical guide for the stranger in Britain; it is also very small, so that it can be tucked easily into a pocket or purse. Free copies may be obtained from the company's North American Sales Office. The address is: Grayson Services (Canada) Limited, 77 Adelaide Street West, Toronto, Ontario.

Luxury for Motorists

It has been pointed out by British Railways that motorists travelling from London to Perth, Scotland, often find the 450-mile drive over highland roads exhausting. To overcome this difficulty, British Railways will operate special trains consisting

of flat cars for automobiles and sleeping cars for motorists between June 15 and September 18 on this route. Ordinarily it takes two days to drive from London to Perth. The trains, however, cover the distance in 10 hours. They leave London on Wednesdays and Sundays and return from Perth on Tuesdays and Saturdays. The round-trip fare for an automobile and driver is \$42.30, with each additional adult paying \$12.69 and each child \$9.17. The fares include sleeping accommodation. Further information may be obtained from British Railways, 69 Yonge Street, Toronto.

1956 Winter Olympic Games

The Winter Olympic Games will be held at Cortina d'Ampezzo, Italy, from January 26 to February 6, 1956. A special committee has been appointed to handle reservations for hotel rooms during this period. It is recommended that those interested in going to the games make arrangements as soon as possible. The committee's address is: Comitato Interprovinciale Alloggi G.O.I., Cortina d'Ampezzo (Belluno), Italy.

Credit and Insurance Abroad

Travelers Credit Service of New York offer tourists both credit privileges in Europe and travel insurance. The initial membership fee is \$15. For an additional \$15 you receive travel accident insurance to the value of \$20,000, reimbursement for medical expenses up to \$1,000 and baggage insurance of \$1,000. The insurance is good for one year while travelling anywhere in the world except in the United States and Canada.

The credit service enables tourists to establish charge accounts with certain of the better shops, restaurants, clubs and car rental companies in 14 European countries. It does not provide credit at hotels. Carrying

charges are included in the membership fee. Terms for payment of the foreign bills are net cash upon receipt of monthly statements.

Anyone interested either in the insurance plan or credit service may obtain further information from the following Canadian representatives of Travelers Credit Service: Dufour Travel Agency, Hull; Tobin's Travel Bureau, Ltd., Montreal; Melville Travel Service, Toronto; University Travel Tours Ltd., Toronto; and Ritari Travel Agency, Sudbury.

Shakespeare in Toronto

The Earle Grey Players will present three Shakespearean plays at Toronto's Trinity College this summer. "Two Gentlemen of Verona" will be the first of the series, commencing June 27. It will be followed on July 11 by "Macbeth" and on July 18 by "The Merchant of Venice".

JUNE

Mid-month — Music Festival, Strasbourg.
19 — Grand Steeplechase de Paris, Paris Auteuil Racetrack.
22-26 — Basque Folklore Festival, St-Jean-de-Luz (Pyrenees).
Late June — Pablo Casals Festival, Prades (Pyrenees)—Festival of Dramatic Art, Angers (Anjou)—24-hour Automobile Endurance Race, Le Mans (Loire).

JULY

19-24 — Breton Folklore Festival, Quimper (Brittany).
Mid-month — Music Festival, Aix-en-Provence.
24 — International Folklore Festival, St-Jean-de-Luz.
Throughout July — Tour de France Bicycle Race, throughout France — International Regatta, Arachon (Gironde).
End of month — Music and Drama in Antique Theatre, Orange.

AUGUST

19-23 — Pilgrimages, Lourdes.
28 — Horseracing, Grand Prix, Deauville.

SEPTEMBER

1-15 — Festival of Music, Besançon (Franche-Comté).
Early in month — International Trade Fair, Strasbourg (2 weeks).
2-10 — International Polo Matches, Biarritz.

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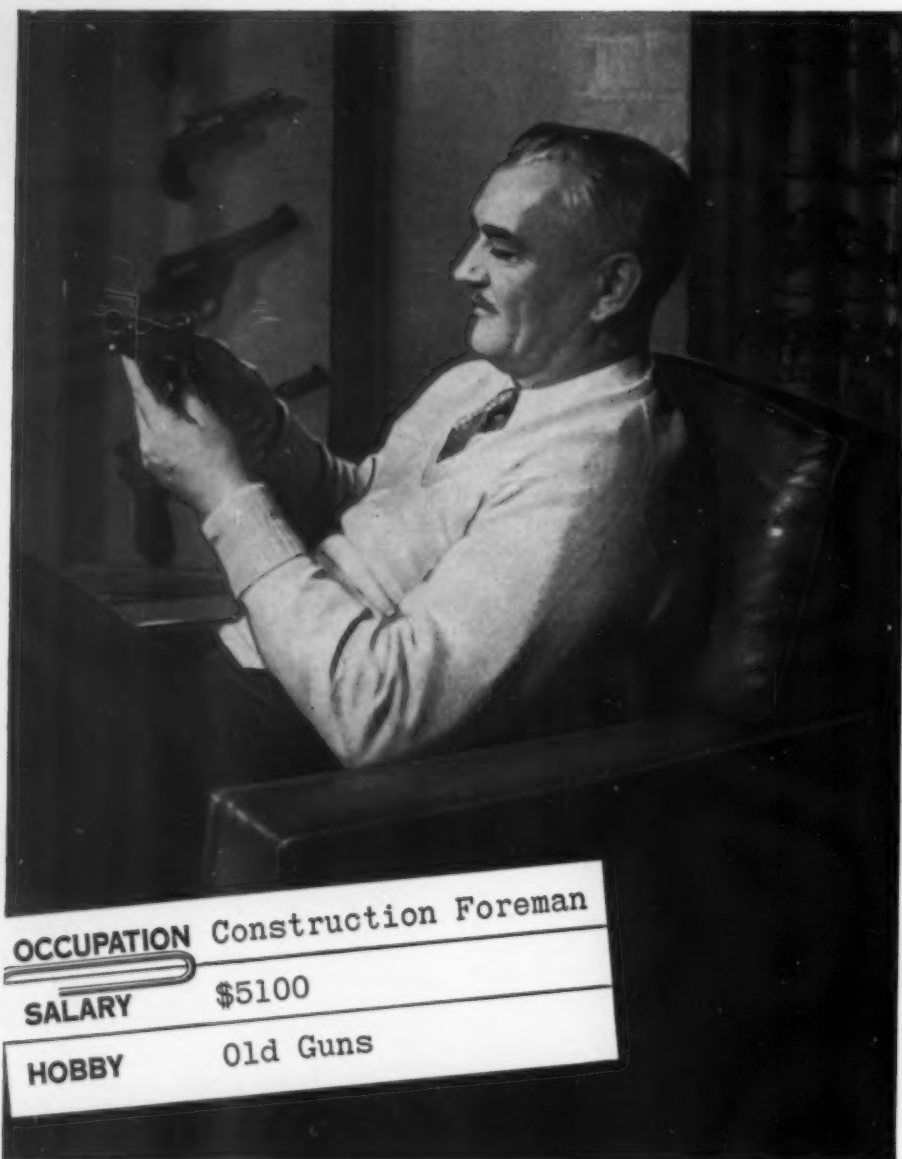
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EDITOR'S NOTE-BOOK

Joseph Forest (*Making "The Story of Light"*) conceived the idea of the film about which he writes in this issue. After U.S. air force service in World War II he joined Transfilm Inc. where he has been writer, consultant, producer, and creative director. Malak, well known for his photography of Canadian industries, went to Holland at the invitation of the Associated Bulb Growers to photograph the tulip fields and the gardens. While there he became interested in the puppet film being made in Amsterdam.—Dr. Trevor Lloyd (*South to the Circle*) is professor and chairman of the Department of Geography at Dartmouth College, New Hampshire. He has travelled and lived in the north, being particularly interested in the arctic regions, and was during part of the war Canadian Consul in Greenland. Subsequently he was first chief of the Geographical Bureau organized by the Canadian Government. The journey described was part of a study of northern Scandinavia aided by a grant from the Arctic Institute of North America and the Carnegie Corporation.—Dr. Marius Barbeau (*Totems and Songs*) has devoted his life to ethnology and folklore, and speaks with a most authoritative voice on totems and native songs. Although he has now retired from the National Museum of Canada he is very active in ethnological research and this summer he is attending the International Folklore Conference to be held in Oslo.—Rear Admiral H. F. Pullen (*The Maritime Museum of Canada*) has made his career in the Royal Canadian Navy; he is now Chief of Naval Personnel. Admiral Pullen has been keenly interested in the establishment of the Maritime Museum and would welcome suggestions or contributions to enhance its interest.—Jean Stenton (*Experiment in Education*) has been travelling and writing for some years, as well as editing on the staff of the *Peterborough Examiner*. She first went to Mexico in 1953 and was so delighted with the beauty of the country and the kindness of the people that she returned the following year.—Gerhard Eichel (*Lynx Ahoy*) is a comparative newcomer to Can-

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ada. Graduate in forestry at Freiburg University, he is employed by the B.C. Forest Service on the forest inventory now being carried out.

* * *

Erratum

Vol. L, No. 3, March 1955, p. 90: The words 'headwaters of the' should be deleted before 'Ottawa River' at the beginning of the 22nd line.

AMONGST THE NEW BOOKS

Asia—East by South A Cultural Geography

by Joseph E. Spencer
(Wiley, New York, \$8.50)

There has long been a need for a book dealing with the cultural aspects of the geography of Asia. A great deal of information has been available in a multitude of sources but it was not readily available to most people. This need has now been met in what should be a satisfactory manner to most geographers by the publication of *Asia—East by South, A Cultural Geography* by Professor J. E. Spencer. The lands and peoples studied are those lying east of Persia and Afghanistan and south and east of the Asiatic reaches of the U.S.S.R. In this vast area, long the home of human groups, the author attempts to relate the various and varied cultural forces that have acted and reacted upon Oriental peoples down through the ages to produce the realm of Southeast Asia as we know it today. These cultural forces are not dormant now but in many instances are extremely active and are an important factor in the continuing and often bewildering changes taking place in the Orient.

The volume is divided into three main sections; "systematic geography", "the regional growth of culture", and "for use in reference".

The first section deals with the area as a whole and ranges in topic from geomorphology to religion to the processes of modernization. Discussion centres on the various geographic and cultural forces that have been in operation throughout the region and how they have tended to bring about similarities and differences in people from one place to another. The natural environment is discussed not only as the home of man but also as a facet to be modified and changed by man. In the Orient, where man has resided in large numbers for so long, much of the natural landscape has been significantly changed as a result of

(Continued on page XI)



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(Continued from page X)

human activity. This reviewer was pleased to see sections dealing with the regional differences of law, religion, social orders and health and disease. These phases of culture are important aspects of group life and are basic to a complete understanding of regional differentiation.

In the second section attention changes to the various national groupings as we know them. These nation areas are considered as regions and while this designation might be attacked theoretically it can be defended on the grounds of convenience. The cultural history of each country is traced to show the stages by which the present day cultures developed and the forces that are now at work to bring about further changes. There is a brief discussion of how the people of each country utilize the resources at their disposal with particular attention to the historic forces that have helped shape the present pattern of resource utilization. The discussion of each area is concluded by a consideration of some of the problems to be faced in the future.

Throughout the text, use of statistics is kept to a minimum. In the third section of the book comparable statistics are given for each area. This manner of presenting statistics is in-

teresting in that it allows the reader to make factual comparisons without thumbing back and forth through the book. The sizable gaps in our statistical knowledge of the Orient are clearly indicated by the missing figures in these tables.

It is necessary to make some comment on the illustrations used. In general, maps are plentiful, clearly drawn and easily interpreted. There are, however, some maps such as those dealing with transportation features that tend to be confusing. Had a different symbol been used for the road networks this difficulty could have been largely overcome. A greater use of photographs would have added much to the value of this book, although it may be that considerations of cost have played an important role in the decision to use few pictures.

In a single volume such as this, covering such a vast area and tremendous numbers of people, it has been necessary for the author to leave out subjects that would be of interest to many readers. To criticize the book because of the omissions would be petty. The value of the book lies in the fact that so much relevant material has been brought together in a volume of reasonable size and price, and presented in a highly readable form.

This book indirectly illustrates the growing difficulty geographers must face in presenting a "complete" geography of a large and varied area within the confines of a single volume. Many aspects of geography are neglected or omitted here. Cultural geography is the theme and as a result physical, economic, settlement and political geography have been played down. If we consider the size of the present volume and consider the aspects of geography left out, we can obtain some idea of the cosmopolitan interest of a geographer and of the important role he can play in the interpretation of one region to another.

Asia, East by South is commended to all those who have a general interest in the Orient; and especially to those who feel that they need a more adequate background in Oriental conditions so that they may be able to understand more intelligently the current stresses and strains in Asia.

GORDON D. TAYLOR

* * *

World Cartography, Vol. II, 1952.
(United Nations, New York, \$1.25)

This annual publication of the United Nations presents information dealing with the use of maps and the state of cartography throughout the world. In this particular edition there

are reports on the progress of mapping in Argentina, Burma, France and Thailand; as well as an article dealing with map reproduction in the United States. Large scale mapping in Great Britain, and international scientific collaboration and geodesy are the subjects of separate papers.

An article by a group of Belgian planners on "Cartography in the service of regional planning" should be of particular interest to geographers. This paper based on a study made of Liège area illustrates the use of maps in presenting the vast amount of data required for a comprehensive regional plan. Several sample maps are reproduced as examples.

The volume concludes with a selected international bibliography of photogrammetry.

A publication such as this one serves a useful purpose in that it provides one means by which cartographers can keep up with mapping techniques and progress throughout the world.

GORDON D. TAYLOR

* * *

Oxford Economic Atlas of the World

(Oxford University Press, Toronto,
\$6.00)

This latest contribution of Oxford Press to geographical works should prove to be a useful reference source for students, business men, and the public in general. Information dealing

(Continued on page XIII)



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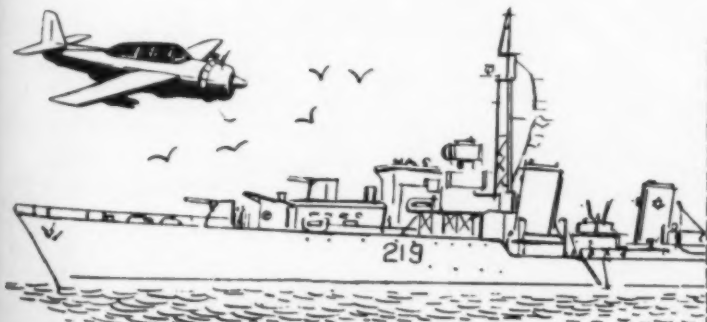
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(Continued from page XI)

with world production of ten commodity groups is presented by means of tables, maps and explanatory textual material. Data are depicted on the maps by means of dots, which, while showing the concentration of production by the density of the dot pattern does not show the relative position of one commodity with another that might be competing with it for production facilities.

Accompanying the maps are diagrams showing total world production of the commodity concerned, the proportion of the product that enters world trade and the principal importing and exporting countries. Tables also illustrate the relative importance of producers both pre-war and now.

For the agricultural products there is a brief explanation of climatic and soil requirements; and of the principal uses of the crops considered. Comparative yields per acre for selected countries are given for the major grains.

An interesting set of maps showing temperature and precipitation data within selected limits for January, April, July and October have been prepared. The basis of the selected climatic criteria are values which are felt to be critical in plant growth. Although a high degree of generalization is required because of the scale of map used, these maps are an important step forward in relating climatic conditions to plant growth on a world-wide pattern. Had this information been further related to

areas of good agricultural land the final result would have been more valuable.

Maps of the movements of goods and peoples should have been more used as they are an essential part of economic geography. Only maps of petroleum trade, passenger ship traffic and scheduled airline flights are shown. Another missing feature is a presentation of the dynamics of production—another important segment of economic geography.

The second section of the atlas is devoted to presenting, by country, statistics relating to production and trade, as well as the occupational structure of the population where available. Percentage land use, communications and currency (values in relation to the pound sterling and United States dollar) statistics are also included.

The compilers and publishers of this atlas have brought together and made available for easy reference a mass of pertinent data. This, by itself, is sufficient justification for the present volume. This atlas is presented, however, as the first of a projected series. Further volumes are to deal with such regions as "The U.S.S.R. and Eastern Europe" and "The United States and Canada". When considered in the light of these circumstances this book takes on greater significance. The publication of the remainder of the series will be awaited with much interest.

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